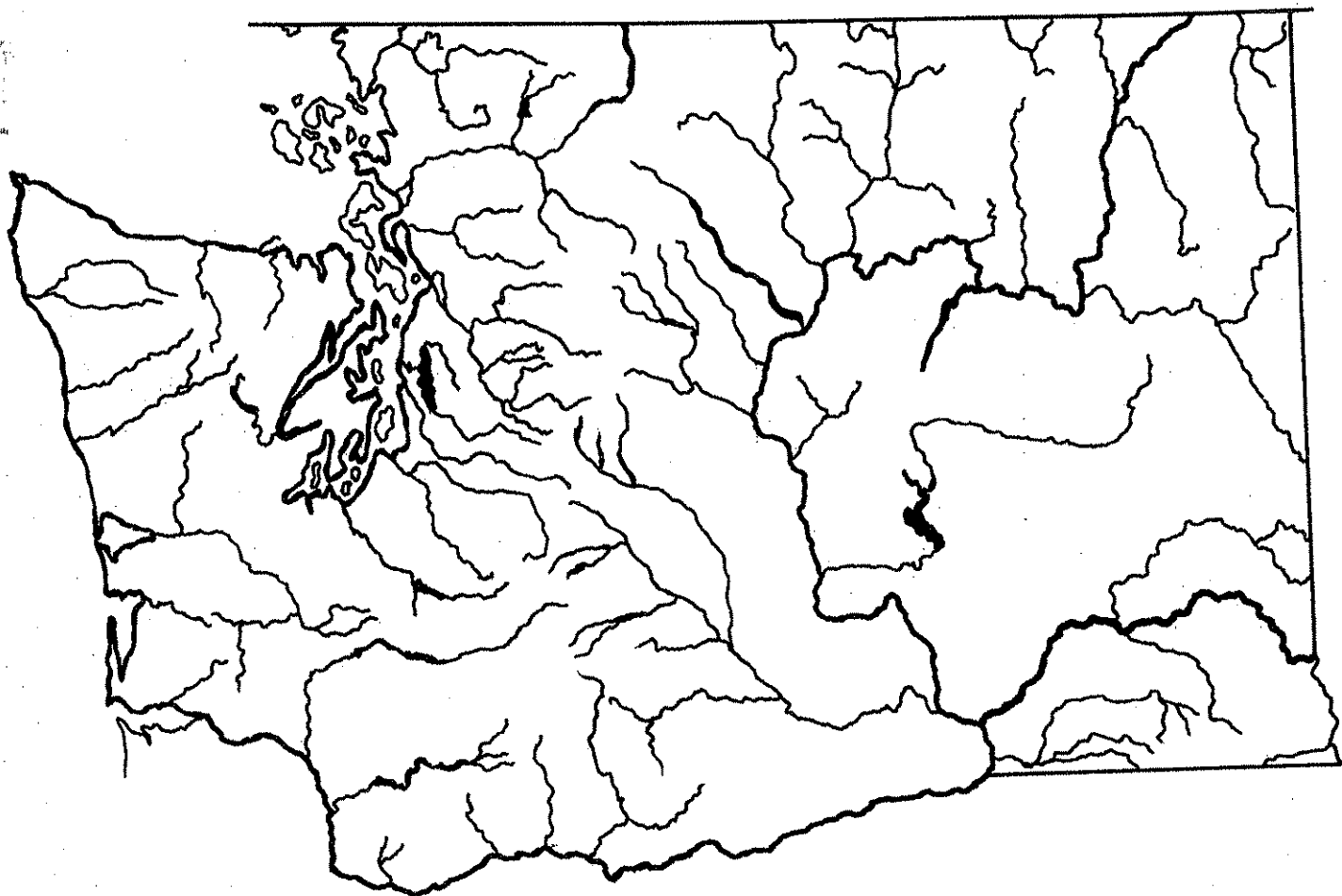




WASHINGTON'S WATER RESOURCES PROGRAM



Washington State Department of Ecology

Seventh Biennial Report to the Legislature

(1983 & 1984)

Department of Ecology
Donald W. Moos
Director

January 1985

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State of Washington
John Spellman
Governor

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SEVENTH BIENNIAL REPORT TO THE LEGISLATURE
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Washington State Department of Ecology

Olympia, WA

January, 1985

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INTRODUCTION

To many people, Washington State appears to have an abundance of water. In the rain forests of the Olympic Peninsula and the lush green landscape of western Washington, visitors see a land with many lakes and streams, most of which flow year round. Even in eastern Washington, a river the size of the Columbia River does much to discourage thoughts of a water shortage. But things are not always what they seem.

Although most prevalent in eastern Washington, water shortages and competition for the available water resources affect portions of the entire state. As population and the development of land have increased, so has the demand for water. This pressure on the resource has grown to the point where water resource development on streams such as the Columbia River has resulted in serious conflicts and competition for the water. This increasing demand has made it even more critical that the Washington State Department of Ecology (WDOE) carry out the legislative mandate of RCW 90.54.040 to develop and implement a comprehensive state water resources program.

The purpose of this report is to provide an overview of the WDOE water resources program during the FY 82-84 biennium and to report on the progress of our Instream Resources Protection Program as required by RCW 90.03.247.

The primary goal of the water resources program is: to ensure that the waters of the state are properly allocated to achieve full utilization for the greatest benefit to the people of the state and to regulate uses in accordance with established rights.

The primary objectives of the program are:

- To manage the state water resources program consistent with state law to ensure that existing water rights are determined and protected through adjudication and enforcement.

- To assure full utilization of the state's water resources through issuance of permits and the assessment and funding of economically feasible and environmentally sound water resources projects.

- To protect and preserve instream values through the definition and establishment of instream flow requirements.

- To preserve the integrity of the state's water resource policies through representation of the state's interests before federal and interstate agencies.

- To provide for expeditious processing of water right applications through technical investigations, data collection, and development of program policies.

To preserve and protect adequate supplies of water to satisfy domestic needs through reservations of water, water right permit conditions, or otherwise.

To assure public safety through a dam safety program.

To promote proper water well drilling and construction through the administration of water well drilling examinations to water well contractors and enforcement.

This Biennial Report describes WDOE's efforts to develop and implement the state water resources program. It reviews past activities, explains current programs, discusses problems that have been encountered, and provides a summary of the major accomplishments during the reporting period from July 1, 1982 through December 31, 1984, consistent with RCW 90.54.070.

The final section of this report provides a brief review of the department's water resources budget request for the FY 85-87 biennium and a brief discussion of the proposed future direction of the program.

MAJOR WATER RESOURCES PROGRAM ELEMENTS

RCW 90.54.040 directs the WDOE to develop and implement a comprehensive state water resources program which will provide a process for making decisions on future water resource allocation and use. The purpose of the program is to ensure that the waters of the state are protected and utilized for the best interests of the people of the state.

Since the enactment of the Water Resources Act of 1971, the department's state water resources program has evolved into a functional planning and management tool. One of the best features of the program has been that it is not totally static. It has changed as the needs and priorities of the state have changed . . . and it continues to do so. However, in spite of the changes, there are a number of major program elements that have been developed which have remained fairly constant, although their relative priorities within the overall program have changed over time.

The following discussion is a review of the major program elements which constitute the state water resources program. For each of these elements the discussion will include: a description of the element, the statutory authority requiring (or enabling) the activity and/or the background of the activity, major accomplishments during the reporting period, problems that have been encountered, and how WDOE is dealing with these problems.

The major program elements which form the state water resources program are:

- Basin/Instream Resources Management (including the adoption of new programs and regulations and the review and revision of existing programs and regulations)
- Representing the State's Interests
- Project Development and Rehabilitation Financing (including the Yakima River Basin Water Enhancement Project and the Second-Half of the Columbia Basin Project)
- New Hydroelectric Development
- Ground Water Management (including Reservations of Water for Public (Water Supplies and Well Drillers Licensing)
- Adjudications of Water Rights
- Water Allocation Activities
- Other Water Resources Management Activities
 - Water Rights Information System
 - Relinquishment
 - Reserved Rights
- Public Safety
- Public Involvement

BASIN/INSTREAM RESOURCES MANAGEMENT

NEW INSTREAM RESOURCES PROTECTION PROGRAMS

Major Issue: Waters in the western states, including Washington, are allocated according to the appropriation doctrine. Historically, many streams, particularly in eastern Washington, were reduced in flow or appropriated to a dry stream bed due to extensive diversions of water for consumptive use. Many of these diversions occurred prior to the establishment of the water rights permit system in 1917.

Irrigation is the predominant consumptive use of water in Eastern Washington, while increasing municipal, domestic, energy and industrial demands for surface water affect many Western Washington streams.

While these offstream uses of water have grown, those values dependent on a flow instream, such as fish and wildlife and recreation, have suffered losses. These losses have been rather dramatic in some parts of the state such as the Yakima River Basin where a combination of problems, including chronic low flows, has resulted in a significant decrease in the number of salmon and steelhead successfully returning to the Yakima system to spawn. Recognizing these losses, and the benefits to be derived from retaining a balance and diversity of water uses, the State of Washington began to protect instream values through the water rights process in the 1950s.

Authority/Background: In 1949, the Legislature declared it to be the policy of the state "... that a flow of water sufficient to support game fish and food fish populations be maintained at all times in the streams of this state." This legislation, codified as RCW 75.20.050 in the State Fisheries Code, provided that the water rights administrator, upon the advice of the directors of the departments of Game and Fisheries, may refuse to issue a permit which might result in lowering the flow of water below that necessary to adequately support fish populations. As an alternative to denial of the permit, the water rights administrator may issue a permit conditioned to a low flow provision.

Under this legislation, approximately 250 streams (nearly all very small) have been closed to further appropriation, and low flow provisions have been applied to individual permits on approximately 250 other streams.

The Minimum Water Flows and Levels Act (Chapter 90.22 RCW) was enacted in 1967 and amended in 1969 to provide a more formal process to protect instream flows. Under this act, WDOE may establish minimum streamflows and lake levels to protect fish, game, birds, or other wildlife resources or recreational or aesthetic values or to preserve water quality. The act sets forth public hearing procedures for the establishment of minimum streamflows and lake levels, but does not define criteria for the determination of such flows or levels. The Department of Ecology utilized this authority in 1971 to adopt minimum flows for the Cedar River, a major source of water supply for the Central Puget Sound region.

The Water Resources Act of 1971 (Chapter 90.54 RCW) provides that, "Perennial rivers and streams of the state shall be retained with base flows necessary to provide for the preservation of wildlife, fish, scenic, aesthetic and other environmental values, and navigational values." The act further provided that lakes and ponds shall be retained substantially in their natural condition. (RCW 90.54.020(3)(a))

Anticipating the potential for conflict between instream and offstream water uses, the act states that, "Withdrawals of water which would conflict therewith (with the base flows) shall be authorized only in those situations where it is clear that overriding considerations of the public interest will be served." (RCW 90.54.020(3)(a)) (parenthetical material added).

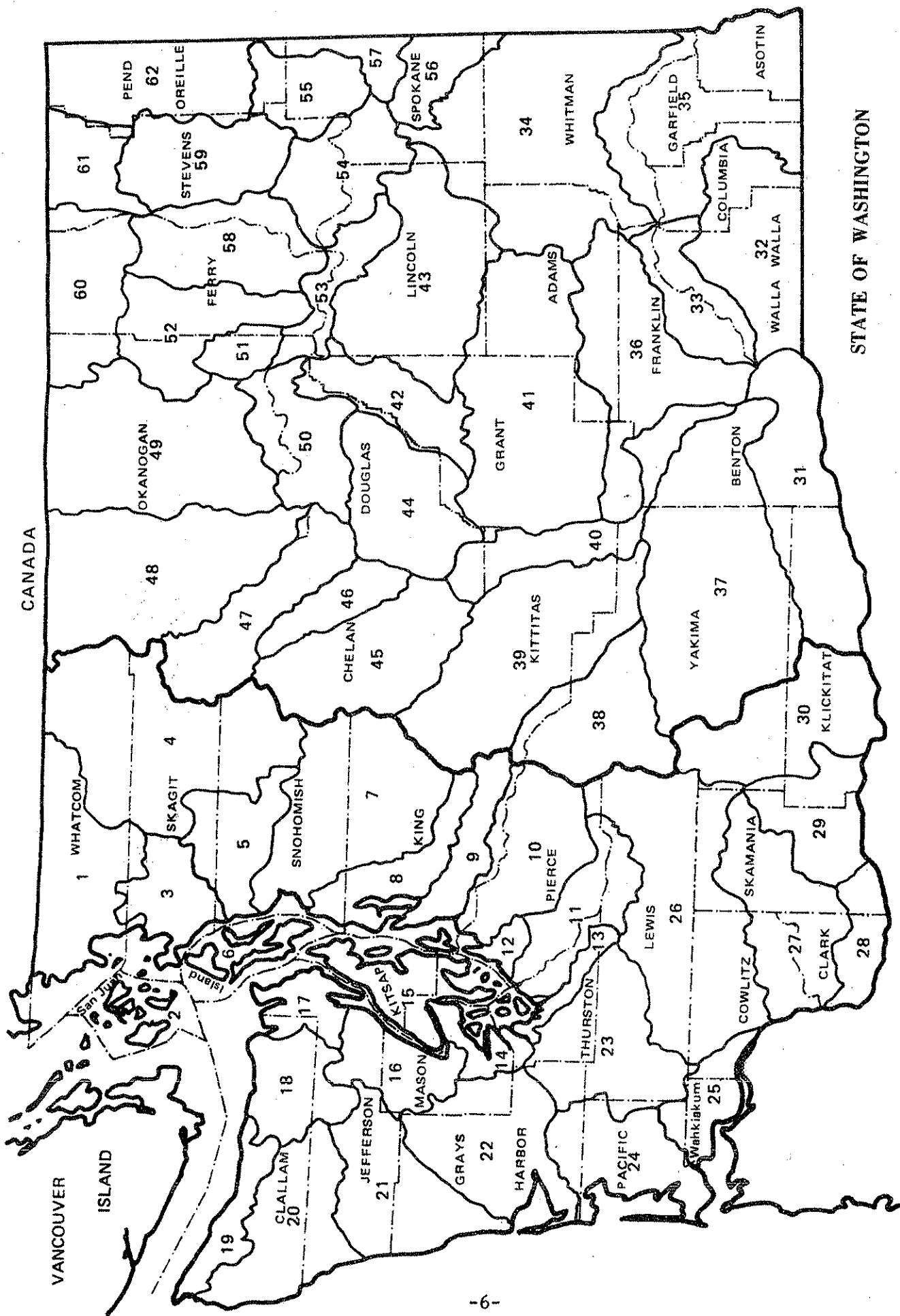
WDOE is vested with exclusive authority to set instream flows and levels on state waters. (RCW 90.03.247) Under this and the authorities noted above, the department has established instream flows on 88 major streams of the state and closed 187 streams and lakes to further consumptive appropriation.

For planning and management purposes, the state is divided into 62 Water Resource Inventory Areas (WRIAs) (see Figure 1). Chapter 173-500 WAC, adopted by WDOE in 1976, provides for the formulation of a water resources management program for each WRIA or group of WRIAs. During the early 1970s, WDOE initiated a basin planning process to address basin specific water allocation policies including instream flows. Between 1974 and 1978, WDOE adopted eight basin management programs for some of the more serious water problem areas of the state. These programs addressed instream water needs and analyzed the level of existing demand in order to define the quantity of water remaining available for further appropriation.

To meet changing priorities in 1979, the department began development of modified basin planning programs. This new effort, the Washington Instream Resource Protection Program, recognizes the high priority of protecting instream resources (primarily fish and wildlife) through the establishment of minimum instream flows. Because of their importance for fish and wildlife and growing demand for off-stream water use, western Washington streams and the main stem of the Columbia River have been treated as high priority.

The WDOE published an overview of the program and an Environmental Impact Statement (EIS) in April 1979. Following public and agency review, the final program EIS was published in June 1979 and work began on individual basin programs.

The Washington Instream Resources Protection Program is a water resources planning effort that focuses principally on the development and adoption in the Washington Administrative Code of regulations designed to preserve and protect instream resource values. These measures include minimum instream flows and closure of streams and lakes to further consumptive water rights appropriation.



STATE OF WASHINGTON

OREGON

Figure 1

WATER RESOURCE INVENTORY AREAS

Minimum instream flows protect streams from consumptive use appropriations approved after adoption of the flows. When the flow of the stream falls below a specified minimum instream flow, those water rights provisioned with those flows must cease or reduce diversion until the instream flow is exceeded.

When a stream is closed to further consumptive appropriation, no further consumptive use water rights will be issued for water diversion during the period of closure. Closures are normally necessary only for the low flow period of the year (generally midsummer to early fall in Washington streams) but may cover the entire year.

Whenever possible, the department prefers to establish minimum instream flows on streams rather than closing them to future uses. However, where it is determined that the level of existing diversions seriously affects the welfare of instream uses, or where any new diversions from small streams would irreparably harm instream values, then the stream may be closed to further consumptive appropriation.

The WDOE works with a number of interested groups and agencies and the public in developing instream protection measures which are tailored to the specific conditions and needs of the individual basins. Public workshops are held by WDOE prior to formulation of instream measures. Once proposed regulations are developed, public hearings are held. WDOE responds to all substantive public and agency comments and incorporates them into final proposals which are considered for adoption by the WDOE director at a final adoption hearing. The department's public participation activities are discussed in more detail in the section of this report entitled "Public Involvement."

Because the establishment of minimum instream flows and levels and stream closures often significantly affects future water development opportunities, these measures can generate considerable controversy. Seldom are any single purpose entities or interest groups fully satisfied with the final adopted regulation but, to date, only one of the instream flow settings has been appealed. This involves the Tolt River in WRIA 7 with the appeal being filed by the City of Seattle. This appeal, originally filed in 1979, may be resolved out of court soon as WDOE has begun a review and revision of the regulation (Chapter 173-507 WAC) at issue in the appeal.

Accomplishments: As of January 1, 1985, instream resource protection programs are completed for the:

- . Snohomish Basin (WRIA 7)
- . Cedar-Sammamish Basin (WRIA 8)
- . Green River Basin (WRIA 9)
- . Puyallup River Basin (WRIA 10)
- . Nisqually River Basin (WRIA 11)
- . Chambers-Clover Creek Basin (WRIA 12)
- . Deschutes River Basin (WRIA 13)
- . Kitsap Peninsula stream systems (WRIA 15)
- . Wenatchee River Basin (WRIA 45)
- . Kennedy-Goldsborough area stream systems (WRIA 14)

Of the above, the Wenatchee and Kennedy-Goldsborough programs were completed during 1983 and 1984.

The Wenatchee River Basin instream program was adopted in June 1983. The Wenatchee River is a major tributary of the Columbia River in Central Washington. It supports diverse and valuable instream and off-stream water uses, including anadromous and resident fisheries, wildlife, recreation, scenic and aesthetic values, irrigation, municipal and domestic supply, and industrial processing. A number of small hydroelectric power projects are proposed on Wenatchee River tributaries. Some additional irrigation, municipal, and domestic use demands are likely in the future.

Because the Wenatchee River is one of the critical habitat areas for upstream Columbia River salmon and steelhead, WDOE determined that it was necessary to assign a high priority to the adoption of instream protection measures in this basin.

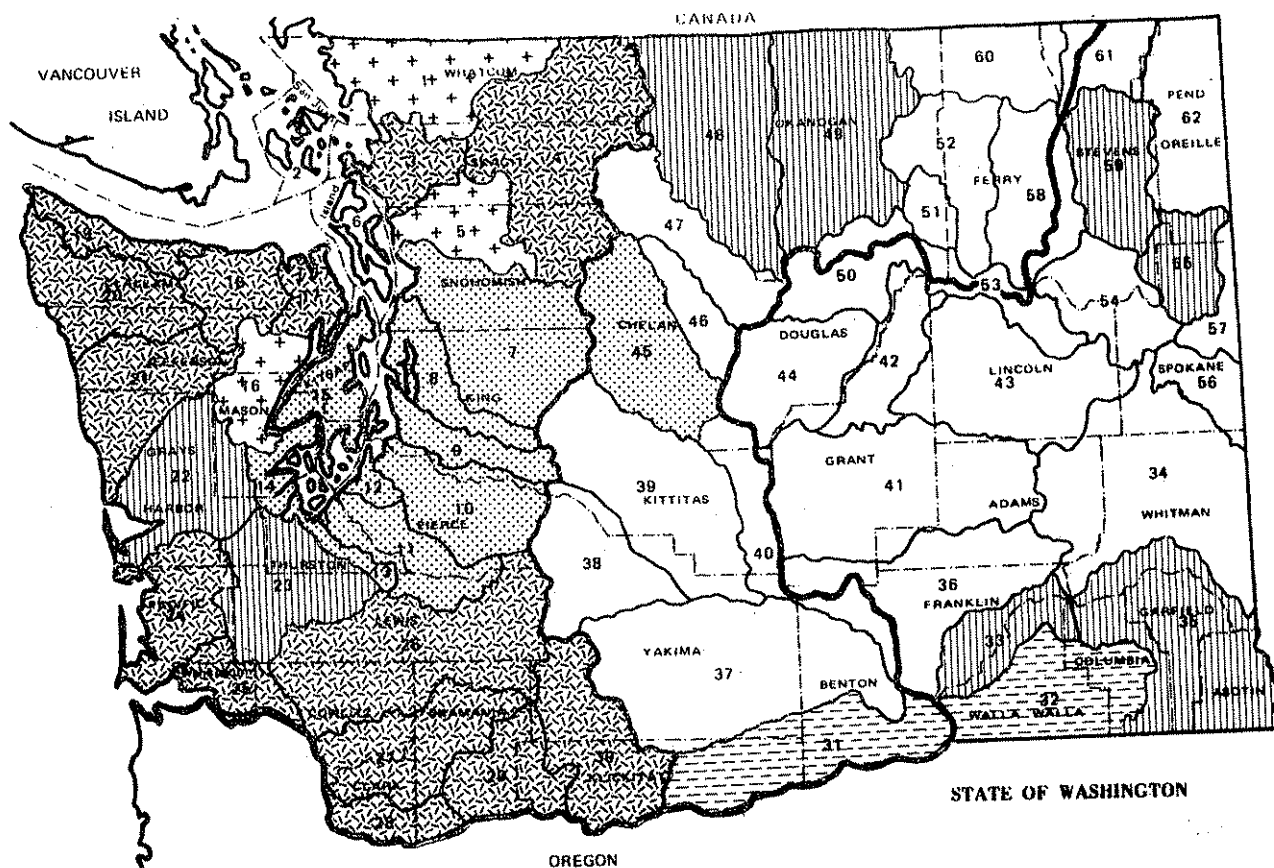
The WDOE program establishes minimum instream flows for the main stem Wenatchee River, Icicle Creek, and Mission Creek. Peshastin Creek, a stream that becomes nearly dry in the late summer due to irrigation diversions, is closed to further consumptive appropriation during the low flow period. These measures are codified in Chapter 173-545 WAC.

An instream resources protection program regulation for WRIA 14 streams (Kennedy-Goldsborough Basin) was adopted by WDOE in January 1984. WRIA 14 consists of numerous small south Puget Sound streams that support small, but cumulatively significant, salmon and trout resources that contribute to commercial and recreational fisheries in Puget Sound. The WDOE regulation (Chapter 173-514 WAC) establishes instream flows on 10 of WRIA 14's larger streams. Ten smaller streams are closed to further consumptive appropriation.

Basin instream programs are in progress in the Nooksack River Basin (WRIA 1), the Stillaguamish River Basin (WRIA 5), and the Skokomish-Dosewallips Inventory Area (WRIA 16). The Nooksack and Skokomish programs are scheduled for completion in 1985. The Stillaguamish program is scheduled for completion in 1986. WDOE plans to initiate new programs for the Skagit River Basin (WRIs 3 and 4) and the Quilcene-Snow Basin (WRIA 17) in 1985.

Figure 2 shows the areas of the state where basin management programs have been developed and where the instream resources protection programs are established, in progress, or scheduled. A brief discussion of the Columbia River Instream Resource Protection Program (CRIRPP) is included in the section entitled Review/Revision of Existing Programs.

Figure 2
STATUS OF BASIN PLANNING — AUGUST 1, 1984



LEGEND

INSTREAM REGULATION ADOPTED



Columbia Main Stem, June 1980 (Revised, Oct. 1982)



WRIA-7 Snohomish, Sept. 1979
 WRIA-8 Cedar-Sammamish, Sept. 1979
 WRIA-9 Green-Duwamish, June 1980
 WRIA-10 Puyallup-White, March 1980
 WRIA-11 Nisqually, Feb. 1982

WRIA-12 Chambers-Clover, Dec. 1979
 WRIA-13 Deschutes, June 1980
 WRIA-14 Kennedy-Goldsborough, Jan. 1984
 WRIA-15 Kitsap, June 1981
 WRIA-45 Wenatchee, Dec 1982

INSTREAM PROGRAM IN PROGRESS



WRIA-1 Nooksack, Apr. 1985
 WRIA-5 Stillaguamish, Sept. 1985

WRIA-16 Skokomish-Dosewallips, Mar. 1985

BASIN PROGRAM WITH INSTREAM FLOWS



WRIA-22 } Chehalis, Mar. 1976
 WRIA-23 }
 WRIA-33 } Lower Snake, 1974
 WRIA-36 }

WRIA-48 Methow, Dec. 1976
 WRIA-49 Okanogan, July 1976 (Revised, June 1984)
 WRIA-55 Little Spokane, Dec. 1975
 WRIA-59 Colville, July 1977

BASIN PROGRAM WITHOUT INSTREAM FLOWS



WRIA-31 John Day/McNary, June 1980

WRIA-32 Walla Walla, Dec. 1977 (Revised, Dec. 1982)

FUTURE INSTREAM PROGRAM



WRIA-3 } Skagit
 WRIA-4 }
 WRIA-17 Quilcene-Snow
 WRIA-18 Elwha-Dungeness
 WRIA-19 Lyre-Hoko
 WRIA-20 Soleduck-Hoh
 WRIA-21 Queets-Quinalt

WRIA-24 Willapa
 WRIA-25 Grays-Elokoman
 WRIA-26 Cowlitz
 WRIA-27 Lewis
 WRIA-28 Salmon-Washougal
 WRIA-29 Wind-White Salmon
 WRIA-30 Klickitat

REVIEW/REVISION OF EXISTING PROGRAMS

Major Issue: There is a need to periodically review existing water resource management regulations to determine their effectiveness and, when appropriate, make any necessary changes.

✓ Authority/Background: It is the policy of the Department of Ecology to review its adopted water resource program regulations at least once in every five-year period and to make changes if necessary.

Accomplishments: Columbia River Instream Resources Protection Program (CRIRPP). Following the adoption of CRIRPP in June, 1980, the department began implementation of the program. The major features of the program were:

1. the establishment of minimum instream flow requirements for the main stem of the Columbia River in Washington State;
2. the inclusion of a provision to adjust the flow requirements to be less restrictive in low water years;
3. the establishment of provisions for future water rights.

Implementation efforts resulted in several problems, the most significant of which was the inability to accurately predict the frequency with which water right holders could expect to be regulated. This resulted in financial institutions refusing to loan money to farmers because of this unknown risk.

As a result, the department proposed a number of changes designed to alleviate these problems. The amended regulation was adopted in October, 1982 and accomplishes the following:

1. Establishes minimum flows for the mainstem Columbia River in Washington State;
2. Maintains the provision for adjustment of the flows in low water years;
3. Establishes a block of water that would be subject to regulation (i.e. curtailment) only about one year in twenty, thereby providing a known risk factor to investors. These conditions apply to the first 4,500 cfs of water rights issued after adoption of the program;
4. Establishes a second block of water that would be subject to regulation about one in two years. These conditions apply to water rights issued in excess of the first 4,500 cfs (and subject to the program);

5. encourages water conservation, especially during low water years;
6. allows future uses of water conflicting with these requirements only when it is considered an overriding consideration of the public interest to do so.

The amendments appear to be working. Water rights have been issued since the amendments and the impediment to financing such projects appears to have been eliminated.

As of October 9, 1984, 97 permits for approximately 240 cubic feet per second (cfs) and 41,700 acre-feet per year (af/yr) for the irrigation of 15,000 acres had been issued subject to the CRIRPP provisions. No water rights have been issued for uses other than irrigation and frost control. Of the 97 permits, 28 were ground water permits for wells in hydraulic continuity with the river (15,703 gallons per minute (gpm)) and 69 were surface water permits (206.38 cfs).

The previous summary of water rights subject to CRIRPP had found that, as of May 8, 1984, permits for 162.70 cfs had been issued. Therefore, in approximately five months time, only 13 permits for 78.58 cfs were issued (all in the Central Region). At this rate it will be many years before the first block of 4,500 cfs is allocated, unless some applications for extraordinarily large projects are received.

Okanogan Basin Management Program: The Okanogan Basin Management Program was adopted as Chapter 173-549 WAC on July 14, 1976 and has guided WDOE's water resource management activities in the basin since that time. As originally adopted, the program established base (minimum instream) flows for the main stem Okanogan and Similkameen rivers, closed certain streams and lakes to further appropriation, and reserved quantities of water for specified uses. After several years of experience in implementing the program, the department identified several problems with the existing regulation and initiated a series of public meetings to discuss the need for, and nature of, revisions to the program.

In June 1984, the revised Ch. 173-549 WAC was adopted. The changes which were made included the following:

- "Minimum instream flows" are defined as synonymous with the term "base flow" and "minimum flow." This was designed to eliminate some of the confusion that has arisen in recent years surrounding the use of these terms;
- Several inconsistencies are eliminated in the minimum instream flows to improve the department's ability to enforce the provisions of the program;
- Specific policies are established related to future hydroelectric power development. This policy is that any such developments which bypass a portion of a stream shall be subject to minimum instream flows. These flows may be those included in the regulation or may be flows specifically tailored to the proposed project;

- A year round closure on all tributaries is changed to a partial year closure during the low flow period. This will make more water available for appropriation than was available under the original program;
- A year round closure on lakes is changed to a policy of retaining lakes and ponds substantially in their natural conditions. This change will allow withdrawals of such waters in some situations where it could not be allowed under the original program. The revised program also conditions future water rights from Lake Osoyoos to an elevation of 910.5 feet after the proposed new outlet control structure is completed.
- Ground water policies are amended. In the original program, ground water was subject to surface water restrictions if there was any hydraulic continuity between the ground and surface water. Due to the nature of the tributary basins, this provision resulted in an all year closure of ground water to match that for surface water. The revised regulation specifies that surface water restrictions apply to ground water only in cases where there is significant hydraulic continuity. This change allows for the approval of ground water development that does impact the stream but for which the impact is delayed and does not occur until after the low flow period. This change dramatically increases the department's ability to treat individual water right applications according to the specifics of the proposal and is expected to result in an increased availability of ground water in the tributary basins;
- An exemption single domestic and stock water uses is continued except that, if the cumulative effect of numerous domestic diversions begins to significantly affect streamflow and lake levels, then any subsequent water rights would be issued only for in-house use if no alternative supply of water is available.

In general terms, the changes made to the Okanogan River Basin Management Program have: maintained the level of protection for instream resources; improved the department's ability to provide meaningful enforcement in low water years; decreased the unnecessarily restrictive portions of the program, and; increased the availability of water from lakes and tributary basins.

Little Spokane Basin Management Program: A similar process was begun for the review and revision of the Little Spokane River Basin Water Resources Management Program. Originally adopted in January 1976 as Chapter 173-555 WAC, this program has been used to guide the department's water resource activities. The revision process has identified several problems and issues and some tentative solutions to the problems. The next major step will be to seek public input on the need for the proposed revisions. However, because of the pending Deadman Creek adjudication decision (a tributary basin to the Little Spokane River), further action on this program is being delayed.

Chehalis Basin Management Program: The Chehalis River Basin Water Resources Management Program was adopted in March 1976 as Chapter 173-522 WAC. The review process was initiated late in 1984. The tentative schedule is to have a draft revised program document available for review sometime during the spring of 1985, with adoption of a revised program probably occurring sometime in FY 1986.

Other Basin Programs: Five-year review of the existing Snohomish River Basin (WRIA 7) instream program began in August 1984, and a revised program is expected to be adopted in 1985. WDOE tentatively plans to initiate five-year review of the Cedar-Sammamish Basin (WRIA 8) and Duwamish-Green Basin (WRIA 9) instream programs in FY 1986.

Water Resources Management Program (Ch. 173-500 WAC): Chapter 173-500 WAC was adopted by WDOE in 1976 to provide guidance to the department in the conduct of its basin planning programs. Since that time, program emphasis has changed, due to limited resources and changed priorities, from development of comprehensive basin management programs to more narrowly scoped instream resources protection programs. In addition, a number of issues have been brought to light regarding statutory language affecting this program area. The WDOE is tentatively considering a number of possible amendments to the regulation. Briefly, possible amendments include the following:

1. Better define maximum net benefits and adopt a consistent procedure for determining maximum net benefits. The Water Resources Act of 1971 requires that "Allocation of waters among potential uses and users shall be based generally on the securing of maximum net benefits for the people of the state." (RCW 90.54.020(2))
2. Define overriding consideration of the public interest and adopt procedures and criteria for making such determinations. The Water Resources Act states that "Withdrawals of water which would conflict therewith (with the base flow) shall be authorized only in those situations where it is clear that overriding considerations of the public interest will be served." (RCW 90.54.020(3)(a)) (parenthetical material added).
3. Better define criteria for establishing instream flows consistent with the purposes of the authorizing statutes. This will permit WDOE to address the optimum flow vs. minimum flow issue generically. Standards for biological and hydrological information may also be addressed.
4. Determine whether certain minor consumptive water uses such as single domestic use and stock watering should be exempt from instream flows and stream closures and under what conditions they may be exempted.
5. Clarify and define the terms base flow (Ch. 90.54 RCW) and minimum flow (Ch. 90.22 RCW).

6. Clarify that instream flow regulations can be adopted without developing comprehensive basin water management plans.
7. Provide general criteria for considering the interrelationship between surface and ground waters.
8. Specify procedures for public notices, public hearings, and other public involvement in the development and consideration of basin plans.
9. Specify the time period within which WDOE must review basin regulations and establish procedures for such review.

Revision of Chapter 173-500 WAC is expected to be a major effort requiring statewide notice and a number of public hearings.

Problems Encountered: The biggest challenge for WDOE's basin/instream planning program during the 1983-84 biennium was maintaining reasonable progress on program development despite reduced budgetary support and staffing for the effort. This program experienced a staff reduction of greater than 50 percent early in the biennium due to reductions in state and federal support.

1. The Instream Resources Protection Program was launched in 1979 with both federal and state resources. The program was greatly aided in its initial two years by grants from the Environmental Protection Agency and the U.S. Water Resources Council. These resources, coupled with state support, were adequate to permit the assignment of six to seven full-time equivalent positions (FTEs) to this effort. Considerable progress was made in this period toward the goal of completing program development for western Washington river basins.

Federal grants were totally eliminated in federal fiscal year 1982 due to federal budget reductions and reorganization. These sources had provided between 50 and 75 percent of the funds available for instream program development. State support was also difficult to maintain due to the state budget crisis brought on by the economic recession. As a result of these reductions, progress was markedly diminished.

Increased general fund support for the program in FY 84 has allowed WDOE to commit two additional positions to the instream resources protection program, bringing the total staff level for this activity to 3.5 FTE. WDOE considers the program adequately staffed to meet current program objectives.

2. In 1980, the Department of Ecology adopted minimum instream flows for the Green River. These flows generally met the approval of the state Game and Fisheries departments at that time. Subsequently, WDOE proposed to issue a water right permit (conditioned to the adopted flows) to the City of Tacoma to divert up to 100 cubic feet per second of water from the Green River for the purpose of municipal water supply. This action was appealed by the Northwest Steelhead

and Salmon Council and the state departments of Game and Fisheries to the state Pollution Control Hearings Board (PCHB). The instream flow levels adopted in 1980 were one of the key issues in the case.

In August 1983, the PCHB rendered its decision following nearly 30 days of testimony. The decision largely supports WDOE's proposed action. Appeals to the Thurston County Superior Court were subsequently filed by the Steelhead and Salmon Council, the departments of Game and Fisheries, and the City of Tacoma.

3. As previously noted, the City of Seattle has challenged the instream flows adopted by WDOE for the Tolt River, a tributary of the Snohomish River. Testimony has not yet been heard on the substantive issues although the suit was originally filed in 1979. Seattle has since sponsored a series of fisheries studies for the Tolt River that could lead to a negotiated settlement. During 1985-86, WDOE will be reviewing its adopted instream flows in consideration of the results of the studies.

REPRESENTING THE STATE'S INTERESTS

Major Issue: Water resource concerns do not begin and end at the border of the state. Washington's water is affected by activities in neighboring states, the Province of British Columbia, and by the policies and actions of the federal government. With the passage of the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) on December 5, 1980, a major new regional authority was established which affects water resources management in Washington. The State of Washington must have its water resources policies and programs adequately represented before state, regional, federal, and international entities and must be a full partner in regional water resources decision making.

Authority/Background: Chapter 90.54 RCW requires that "The state shall vigorously represent its interest before water resource regulation, management, development, and use agencies of the United States, including among others the Federal Power Commission, Environmental Protection Agency, Army Corps of Engineers, Department of the Interior, Department of Agriculture, and the Atomic Energy Commission, and of interstate agencies with regard to planning, licensing, relicensing, permit proposals, and proposed construction, development, and utilization plans. Where federal or interstate agency plans, activities, or procedures conflict with state water policies, all reasonable steps available shall be taken by the state to preserve the integrity of this state's policies." (RCW 90.54-.080) (Additional authority is found in RCW 43.27A.090).

Accomplishments: Northwest Power Planning Council Activities. The Northwest Power Act, (Public Law 96-501) enacted December 5, 1980, established a new regional body called the Pacific Northwest Electric Power and Conservation Planning Council, commonly referred to as the Northwest Power Planning Council (council). Officially formed on April 28, 1981, the council is composed of eight members, two from each of the four states of Idaho, Montana, Oregon, and Washington. A primary mandate of the council under the Northwest Power Act is to develop and adopt a long range regional conservation and electric power plan to ensure that energy supplies are adequate to meet anticipated future demand. The regional energy plan was adopted on April 27, 1983.

A second major provision, Section 4(h) of the Northwest Power Act, directs that before the regional energy plan is developed, the council must develop a program "to protect, mitigate, and enhance fish and wildlife, including related spawning grounds and habitat, on the Columbia River and its tributaries." This fish and wildlife program, designed to compensate for losses to fish and wildlife caused by the Columbia River hydroelectric system, was formally adopted by the council on November 15, 1982.

Since the adoption of the fish and wildlife program and the regional energy plan, the department has been involved in the implementation of the program and plan provisions. This has included a variety of activities from simply monitoring actions of other agencies to providing comments and participating in various task forces and committees.

On November 15, 1983, the Council began accepting recommendations for amendments to the fish and wildlife program. While the Department of Ecology did not submit such recommendations, it did review the 142 that were proposed, and submitted comments on several.

Also in 1983, the Council established a Hydropower Assessment Steering Committee (HASC) to provide guidance to the Council, staff, and contractors in carrying out the three following hydro-related studies.

1. Cumulative effects methodology, mandated under Section 1204(b)(2) of the Fish and Wildlife Program;
2. Critical habitat study, mandated under Section 1204(c)(1) of the Fish and Wildlife Program; and
3. Hydropower site-ranking study, mandated by Section 14.2 of the two-year action plan of the Northwest Energy Plan.

In 1984, the River Assessment Task Force (RATF) was also formed to recommend the design of a study to address the hydropower related needs of both the fish and wildlife program and the power plan. This is to include ranking of hydro sites, an improved hydro data base, and how these will be coordinated with the cumulative impacts study.

The department has submitted comments to the HASC and the RATF and staff have attended most of the meetings. The WDOE's role is principally one of monitoring the Council's activities, coordinating with other state agencies, and making recommendations as the state water resources agency, when appropriate.

The council has commissioned the Bonneville Power Administration to conduct the Pacific Northwest Rivers Study. This study is designed to assess the significance of river segments and systems for multiple resources values, including resident fish, wildlife, natural features, cultural, recreational, and institutional constraints. The findings of the study will form a resource information base for use in council, Bonneville Power Administration, and state hydropower planning activities. The department is participating in this study, although the precise nature and extent of this effort has not yet been determined.

Testimony on Federal Water Policy Legislation: During the past two years, the Department of Ecology has continued its role of monitoring federal legislation and presenting its views. In many cases, the provision of state comments is through bodies such as the Western State's Water Council or the Interstate Conference on Water Problems. Both of these organizations closely monitor federal water resource policy development and frequently solicit comments from their state members. In formulating such comments, the department takes the position that the state is the proper authority for the allocation of waters and opposes any federal policies that might endanger such a policy.

Hydropower Licensing by the Federal Energy Regulatory Commission: Section 9(b) of the Federal Power Act of 1920 requires each applicant to the Federal Energy Regulatory Commission (FERC) for a license to build a hydroelectric project to "... submit ... satisfactory evidence that the applicant has complied with the requirements of the laws of the state or states within which the proposed project is to be located with respect to bed and banks and to the appropriation, diversion, and use of water for power purposes. ..."

Although it would appear that this language would require a FERC license applicant to first obtain a water right permit from the state, the U.S. Supreme Court ruled otherwise in 1946 in the case of First Iowa Hydroelectric Cooperative v. Federal Power Commission (328 U.S. 152). Subsequent cases involving hydropower projects in Washington (i.e. Mayfield and Mossyrock dams on the Cowlitz River) and in other states have solidified the holding that FERC has authority to prevent state law under terms of the Federal Power Act. Because new hydropower project development occurred slowly during the 1960s and 1970s, this issue was relatively unimportant. However, with the overwhelming renewal of interest in developing hydropower during the 1980s, the threat has become more imminent that development and management of many of Washington State's streams and rivers will be determined by FERC. Additional authority granted to FERC by Congress in the late 1970s to allow exemption from the federal licensing requirements further complicates this situation. However, FERC's exemption program was dealt several serious setbacks by federal court decisions in 1984 regarding projects located in the State of Washington.

WDOE has been active in the hydropower issue in five ways:

1. WDOE continues to work with the Western States Water Council in developing or supporting new legislation to amend and clarify the Federal Power Act to give the states greater authority to regulate hydropower projects within their borders.
2. WDOE has filed numerous petitions to intervene in the FERC licensing process for specific projects in order to adequately represent the state's interest. WDOE has also explored other less cumbersome ways of being automatically recognized in FERC actions in Washington State. Although the federal Fish and Wildlife Coordination Act provides automatic recognition to federal and state fish and wildlife agencies, no such automatic enfranchisement in the FERC licensing process is afforded state water management agencies.
3. WDOE met with officials from FERC in 1981. As a result of this meeting, FERC agreed to require applicants to at least "consult" with WDOE in regard to water rights and minimum instream flows, and to ensure that WDOE is notified of all applications for preliminary permits, licenses, and exemptions. This has improved the ability of WDOE to express its concerns early in the process of project feasibility analysis.

4. Members of the Western State's Water Council, including WDOE and the Washington State Attorney General's office, are interested in finding an appropriate case to relitigate the issues it is believed were wrongly determined in the First Iowa Hydroelectric case. State attorneys have some confidence that such a challenge could successfully reverse First Iowa due to recent decisions and trends in the federal courts that are redefining federal-state relationships and responsibilities over water resources.
5. WDOE has commented on various regulations proposed by FERC that could tend to further impair state water agency authority over hydropower.

The result of these activities has been positive. Although FERC continues to claim authority to override state law, in practice it has expressed support for the state's efforts to resolve environmental problems prior to licensing and will generally accept and consider WDOE recommendations regarding water rights, and minimum flows. Within the limits of staff availability, WDOE will continue to present its case to FERC on significant hydropower projects. See also discussion entitled "New Hydroelectric Development."

Coordination with other federal agencies: WDOE deals extensively with federal agencies involved in water related projects and programs. Principal among these agencies are the Bureau of Reclamation (USBR) and the Army Corps of Engineers. Among the projects in which WDOE is involved with the USBR is the Yakima River Basin Water Enhancement Project. This is described more fully on page 25. WDOE has also been actively coordinating with the Corps of Engineers on several projects, as follows:

Corps of Engineers Water Resources Projects: The Corps of Engineers has traditionally been involved in development and operation of federal water projects for flood control, water supply, hydroelectric energy, and conservation purposes. The Corps built and operates five hydroelectric and navigation dams on the mainstem Columbia River and four dams for the same purposes on the lower Snake River in Washington. In Western Washington, the Corps owns and operates Howard A. Hanson Dam on the Green River, Mud Mountain Dam on the White River, and Wynoochee Dam on the Wynoochee River. The Corps has also constructed navigation improvements and flood control works on many streams in the state.

In an issue dating back to a severe flood in 1959, WDOE has been active in the Corps' feasibility study of the Snohomish River Basin Mediated Agreement. This four-year study was completed in late 1982, and found that the flood control dam proposed as part of the 1974 Mediated Agreement is economically and technically infeasible. As overall local sponsor for this Corps study, WDOE chaired a technical advisory committee made up of interested local governments and provided limited funding to support the Snohomish Basin Coordinating Council, a group of local citizens and elected officials charged with overseeing this controversial issue. The Corps has reached preliminary conclusions that there would be no justifiable federal interest in a relocated North Fork Snoqualmie Dam,

and that the Mediated Agreement, as a package, is not implementable. The Corps will continue to investigate channel improvements at the City of Snoqualmie.

The Snohomish Basin Coordinating Committee, after ten years of frustration in its attempts to implement the Mediated Agreement, voted to disband in August 1984. The King County Planning Division is retaining the records of the committee.

WDOE was involved closely with the Corps of Engineers in the early 1980s during the Corps National Hydropower Study. WDOE provided extensive comments including ratings for each site on the Corps' inventory. As a result of the study the Corps has narrowed an extensive list of projects down to the following ~~six~~ ^{five} sites in Washington meriting further investigation for federal development or participation.

- Icicle Creek, tributary to the Wenatchee River (WRIA 45).
- Similkameen River, tributary to the Okanogan River (WRIA 49).
- Wynoochee River, tributary to the Chehalis River (WRIA 22).
- Canyon Creek, tributary to the Lewis River (WRIA 27).
- Cispus River, tributary to the Cowlitz River (WRIA 26).

The following is a list of current Corps activities involving either existing or new dams:

1. Storage of additional water for conservation and water supply purposes will be addressed in a study of Howard A. Hanson Dam and reservoir on the Green River which began in September 1984. WDOE has worked closely with the Corps in developing the scope of studies. The retrofitting of hydroelectric generation at the dam is also being explored by the Corps.
2. A joint project with the City of Aberdeen involving the development of hydroelectric generation facilities and construction of a large salmon and steelhead hatchery at Wynoochee Dam in Grays Harbor County is under study by the Seattle District of the Corps of Engineers. WDOE has discussed with the Corps the maintenance of a minimum flow below the project. Detailed studies will be carried out after authorization of the project by Congress. The State of Washington is the local sponsor for development of the fish hatchery which would provide compensation for lost fisheries resulting from the dam and reservoir. The City of Aberdeen is the local sponsor for hydropower development.
3. The City of Bellevue requested that the Corps study a proposed multipurpose project involving a dam and reservoir on the North Fork Snoqualmie River. This federally constructed and operated project will most likely not meet federal participation guidelines. Bellevue, the local sponsor for hydroelectric power generation and

municipal water supply, will continue analysis of the project as a municipal enterprise. Flood control, low flow augmentation, and recreation are also potential project purposes that have been recommended by reviewing agencies for investigation.

4. Feasibility studies are being initiated by the Corps in partnership with the City of Leavenworth for a water supply and hydroelectric generation project on Icicle Creek, a tributary of the Wenatchee River near Leavenworth. As presently conceived, this would be a single purpose project that would not involve storage of water, but a low dam and a five-mile diversion pipe to a downstream powerhouse.
5. Okanogan PUD No. 1 and the Oroville and Tonasket Irrigation District are sponsoring reconnaissance and feasibility studies being conducted by the Corps of a multipurpose project on the Similkameen River in Okanogan County. Potential project purposes include 60 megawatts of hydroelectric power, flood control, irrigation, recreation, and fisheries enhancement. The Corps is currently in the early stages of assessing the feasibility of building such a dam. While some studies have been completed, many more still need to be done. The Corps intends to prepare an Environmental Impact Statement on this proposal and the department will continue to monitor these activities.
6. A multiple purpose (hydropower, flood control, and recreation) project on Canyon Creek in the Lewis River basin will be investigated for economic and environmental feasibility by the Corps for the next two years.
7. Two potential multipurpose reservoir sites on the Cispus River in the Cowlitz River basin have been identified for further studies. The Corps is not currently funded to investigate these sites, but may be in the future.

Representation on Regional and Interstate Organizations: A number of organizations provide communication and coordination between federal and state governments and among states in water resource matters. Membership in these organizations greatly facilitates the state's efforts to solve mutual problems and to represent its interests with respect to the federal government.

WDOE is an active member of the Western States Water Council, a 13-state organization that has been highly effective in facilitating the exchange of information on water problems of interest to western states, and in representing the states' interests. WDOE is also a member of the Columbia River Water Management Group, an organization of federal and state agencies involved with operation of the Columbia River basin dams.

WDOE also participates in the activities of the Interstate Conference on Water Problems, the Association of Western State Engineers, the National Governor's Association - Water Management Subcommittee, and the Western Governor's Association (WGA).

WGA is an independent, nonpartisan organization of 16 western states, one Pacific commonwealth, and two territories. Established in 1984, as a result of the merger between the Western Governor's Policy Office (WESTPO) and the Western Governor's Conference (WGC), its purpose is to strengthen the policymaking and management capacity of member states and their role in the federal system. It is involved in a broad range of functional concerns, including energy, agriculture, water, natural resources, international trade, fiscal policy, economic development, and related issues.

Relationship with Canada: The fact that nearly 25 percent of the surface water available in Washington originates in Canada provides some measure of the significance of our relationships with our northern neighbor. The foundation for these relationships is provided by the Boundary Waters Treaty of 1909. Among other features, this treaty established the International Joint Commission (IJC) with jurisdiction over certain questions involving use, obstruction, and diversion of boundary waters.

In 1961, the United States and Canada signed a treaty relating to the development and management of the Columbia River system. Under the provisions of this treaty, dams have been constructed in Canada at Arrow Lake, Duncan Lake, and Mica Creek, and in Montana at Libby.

On February 11, 1982, the Washington State Legislature passed Substitute Senate Bill 4846 which was subsequently signed into law by the Governor. This measure authorizes construction of a new control structure for Osoyoos Lake and provides up to \$3 million dollars as the state's contribution toward the project - one-half of the estimated cost of completion of the control works. The legislation also stipulates that the state's funds can be used only when matching funds are committed by British Columbia.

Osoyoos Lake straddles the border between British Columbia and Washington State in Okanogan County and its level is presently controlled by the deteriorating Zosel Dam, built in 1927.

On December 8, 1982, the IJC issued an Order of Approval to Washington State for construction of a new control structure for the international waters of Osoyoos Lake. The 1982 order approved, with stipulations, the state's proposal to construct new control works for the international waters of Osoyoos Lake in the Okanogan Valley. The Province of British Columbia supported the state's application to the IJC and the state and province jointly issued a cooperation plan which contains operational procedures for Osoyoos Lake to be implemented upon completion of the new control works. In early November 1984, British Columbia announced that the provincial Treasury Board had approved the appropriation of matching funds for construction of the Osoyoos Lake control works. Presently the state and the province are making arrangements for meetings to discuss funding agreements, design, and construction of the project.

PROJECT DEVELOPMENT AND REHABILITATION FINANCING

Major Issue: The Department of Ecology is continuing to evaluate the needs for water resources development and alternative methods of financing. The state's constitutional debt ceiling may be a key to any new proposals of state general obligation bonds. With the federal water resources development funding programs being reduced, the importance of state financing has dramatically increased in recent years. The need to develop new storage and/or conserve water and the need for a greater proportion of state financing to secure federal funds for water projects have created an urgent need for the development of alternative methods of financing. The state must take the lead in this activity to ensure that our waters are beneficially used and conserved for the people of the state and to maintain and enhance the state's economic condition.

Authority/Background: "The Department of Ecology shall as a matter of high priority evaluate the needs for water resource development projects and the alternative methods of financing of the same by public and private agencies, including financing by federal, state, and local governments and combination thereof."--Water Resources Act of 1971, RCW 90.54.100.

The State of Washington currently has four separate funding sources for financing water resources project development and rehabilitation. The three primary sources for the past 12 years have been Referendum 27, Referendum 38, and the Emergency Water Supply Program. The primary source is presently Referendum 38. The fourth source, the Reclamation Revolving Account, was established in 1919 by the Legislature and was the only source of funding prior to 1972. The State Reclamation Act (Chapter 89.16 RCW) provides long-term, low-cost financing for irrigation/reclamation districts through loans and purchase of district bonds to promote reclamation and development of agricultural lands. The account also finances rehabilitation of existing projects. There has been very little activity in the Reclamation Revolving Account in recent years due to the availability of other monies with the initiation of the Washington Futures Program in 1972.

Referendum 27, now codified in Chapter 43.83B RCW, was part of the Washington Futures bond package approved by the voters. It authorized the issuance of \$75 million in general obligation bonds for planning, acquisition, construction, and improvement of water supply facilities in Washington.

During the 1977 session of the Legislature, the Emergency Water Supply Bond Issue was authorized and also codified in Chapter 43.83B RCW. It authorized \$18,000,000 of general obligation bonds for planning, acquisition, and improvement of water supply facilities to alleviate unsatisfactory water supply conditions arising from the 1977 drought. The Emergency Water Supply Laws of 1977 were amended in 1979 to allow the use of these funds to help alleviate the continuing water shortage in many areas of the state.

Referendum 38 is a \$125 million water supply bond issue approved by the voters in 1980. It is codified in Chapter 43.99E RCW. It authorized \$50 million of the bond issue for agricultural water supply alone or in

combination with fishery, recreational, or other beneficial uses. The funds can be used for planning, design, acquisition, and construction of new, or improvement of existing, water supply facilities.

Accomplishments: A summary of each program including the dollars expended and the projects or irrigation/reclamation districts benefited follows:

1. Referendum 27

Out of the \$75 million Referendum 27 bond issue, \$25 million was designated for agricultural water supply. Bonds are sold based upon the estimated needs and deposited into the State and Local Improvement Revolving Account. Legislative appropriations are made to the Department of Ecology from this account. WDOE may make grants and loans to irrigation districts or may make direct expenditures. As of November 30, 1984, sixteen projects have been financed through cost-sharing grants and/or loans with irrigation districts and/or the federal government. These contracts total \$20,422,601 (\$19,190,551 in grants and \$1,232,050 in loans). Seventeen irrigation districts are benefited affecting approximately 250,965 acres (one of the 16 projects affects two irrigation districts). (See Table 1 in the appendix.)

2. Emergency Water Supply

Under the Emergency Water Supply Program, bonds are sold and deposited in the State Emergency Water Project Revolving Account. Eighteen million dollars were authorized for emergency water supply projects. Legislative appropriations are made to the Department of Ecology from the emergency revolving account for grants and loans to irrigation districts or for direct expenditures.

Approximately \$2.5 million was expended on 14 projects to alleviate the effects of the 1977 drought. Five irrigation districts benefited, affecting approximately 3,763 acres.

Contracts totaling \$13,617,600 (\$6,867,100 in grants, \$6,126,000 in loans and \$624,500 by direct expenditures) have been executed as of November 30, 1984. Ten projects have been financed in total or through cost-sharing with irrigation districts and/or the federal government, benefiting six irrigation districts and affecting approximately 44,000 acres. (See Table 2 in the appendix.)

3. Referendum 38

Out of the \$125 million bond issue, \$50 million was designated for agricultural water supply alone or in combination with fishery, recreational, or other beneficial uses. Bonds are sold based upon estimated needs and deposited in the State and Local Improvement Revolving Account. Legislative appropriations are made to the Department of Ecology for grants and loans to irrigation districts or for direct expenditures.

Contracts totaling \$10,519,181 (\$7,469,526 in grants, \$2,186,181 in loans and \$863,474 by direct expenditures) have been executed as of November 30, 1984. Eighteen projects have been financed in total or through cost-sharing with irrigation districts and/or the federal government, benefiting ten irrigation districts and affecting approximately 73,000 acres. (See Table 3 in the appendix.)

4. Reclamation Revolving Account

This account was the only source of state financing for irrigation development and rehabilitation for 53 years. Financing was available to irrigation districts through loans and purchase of district bonds. The amount of money available in the account varies from paybacks, bond redemptions, and power license fees collected. There is now approximately \$250,000 in the account available for loans and bond purchases.

Since Referendum 27 and 38 and the Emergency Water Supply Programs have been available, very little financing from this account has occurred. Prior to 1972, approximately 68 projects were completed with funds from the Reclamation Revolving Account. None are presently pending or under construction under this account.

The original dollar amount for the bond investment projects was \$2,813,500 benefiting 20 irrigation districts. The present bond indebtedness is \$1,207,900. (See Table 4 in the appendix.)

The original dollar amount for the advances (loans) was \$67,500 benefiting two irrigation districts. The present loan balance is \$63,836. (See Table 5 in the appendix.)

The present status of the agricultural water supply funds (as of November 30, 1984) is summarized in Table 6 in the appendix.

Table 7 in the appendix shows the planned Agricultural Water Supply projects.

Yakima River Basin Water Enhancement Project: The Yakima River Basin Water Enhancement Project (YRBWEP) is a feasibility investigation study authorized by Congress in Public Law 96-162 on December 23, 1979. The study was initiated in April 1981. The State of Washington supports the study and has provided \$500,000 to help fund the investigation (Substitute Senate Bill 2504, Chapter 263, Laws of 1979, 1st Extraordinary Session). The study team conducting the work is comprised of U.S. Bureau of Reclamation and Department of Ecology personnel. The purposes of the study are to (1) provide firm water supplies to presently irrigated lands; (2) provide water supplies for irrigation of new lands on the Yakima Indian Reservation; (3) provide adequate minimum streamflows for fisheries, game, and recreation; and (4) develop a comprehensive plan for the basin to foster efficient management of existing water supplies.

Phase 1 of the study was completed in August 1982 and recommended that Phase 2 proceed and that early funding and construction be pursued for the East Selah Reregulating Reservoir and fish passage and protective measures.

Phase 2 of the YRBWEP began in October 1982. The determination of supplemental irrigation water needs and instream flow needs for fisheries is nearing completion. Potential storage sites have been further evaluated in Phase 2 and those remaining in consideration are as follows: Bumping Lake Enlargement, Cle Elum Lake Enlargement, Wymer (Squaw Creek), and Horsetail (Little Naches River). Nonstorage alternatives, such as conservation and ground water developments have been assessed and will be under further consideration. The study team is now ready to enter the plan formulation stage where various plan elements will be combined into alternative plans to be compared relative to costs and benefits. A status report on the project plan elements will be available by January 1985. It is anticipated that a completed project report and environmental impact statement will be issued by July 1986.

Legislative appropriation was made to the Department of Ecology in the 1983 regular session (\$14,500,000) for the land acquisition and the design and construction of the East Selah Reregulating Reservoir (ESRR). Phase 1 of the predesign/preconstruction investigations has been completed with the results issued in the Phase 1 report. This report further defined the water savings and operations feasibility. It also confirmed the water holding capabilities of the reservoir site as well as the physical effects of such storage on the surrounding water table. The environmental issues are now being studied and resolved. Detailed design and preparation of plans for construction will follow.

The Department of Ecology is presently involved in two cost-sharing projects which include the design and construction of fish ladders and screens as part of the YRBWEP. These projects are: (1) the City of Yakima's Naches River diversion dam (fish ladder and screens as part of the dam rehabilitation) and (2) the Columbia Irrigation District's Horn Rapids diversion dam on the Yakima River (fish ladders and screens). The estimated cost of state cost-sharing on these two projects is approximately \$1,112,000. Federal approval has been received for credit on this amount as part of the state's share on future YRBWEP costs.

Columbia Basin Project, 2nd Half Development: WDOE has been actively involved in the investigation and planning for completion of the second half of the Columbia Basin Project. About one-half of 1,095,000 acres authorized for project development is now irrigated. Portions of the remaining approximately 500,000 acres are irrigated. Approximately 20 percent or 100,000 acres are irrigated from ground water pumping. State cost-sharing in the construction of the water supply facilities to bring water to the second half will play a very big role in the process to start new development. Fifteen million dollars of state funds were used to cost-share the construction of the second Bacon Siphon and Tunnel which was completed in 1980.

An environmental impact study (EIS) is needed to resolve environmental issues, determine economic feasibility and compare alternative plans. As part of this process, WDOE is funding a socioeconomic study to update and evaluate the socioeconomic aspects of the proposed second half development. This \$198,000 study will be used as part of the federal EIS and credit for this amount has been given to the State of Washington for cost-sharing in the preconstruction project work. The results and analysis from the socioeconomic study and EIS will provide answers to key issues and help in the decision of whether to provide further state funding.

Problems Encountered:

As previously discussed, the YRBWEP and the completion of the Second Half of the Columbia Basin Project are, and will likely continue to be, the most pressing water resource development issues to be addressed in the next few years. The completion of the YRBWEP feasibility study will provide guidance and direction as to the feasibility of new storage, how much water is needed, and where it will be used. Likewise, the socio-economic study and upcoming federal EIS on the completion of the Columbia Basin Project will provide options for decision makers on which direction to follow. Probably the most important aspect of either of these two projects will be the role of state funding. It is becoming increasingly apparent and important that the state will have to take a leadership role and provide a certain amount of cost-sharing before any federal funds are to be made available in the future. This is due to federal policies regarding the relative priority and funding of water supply projects.

WDOE's coordination and input to the Western State's Water Council and the state's Congressional Delegation consistently urges that the states' cost-sharing proportion be held within reason commensurate with the states' abilities to raise funds and that federal appropriations be maintained at an adequate level. Other mechanisms being investigated as possible state alternative funding sources include debt financing, user fees, and bond banks.

To assure that the irrigated agricultural economy in the state remains intact, continual efforts must be made to rehabilitate and replace water supply facilities where needed. State financing of a share of the costs is the key to this effort. The problems of limited local and federal funds are difficult to overcome in light of the present farm economy and federal policies.

State project planning and assistance continues to the extent possible and limited technical assistance is provided to help irrigation districts apply not only for state funds but for federal funds. Other guidance is provided to local irrigation districts when possible, including financial analysis and engineering reviews for cost-effectiveness. All assistance is intended to relieve the districts' financial burdens and to reduce costs through new and improved facilities. Monitoring the irrigation districts' and U.S. Bureau of Reclamation's planning and budget efforts in water resources development and rehabilitation projects has worked quite well and is returning dividends to the state. By working closely with the districts on proposed projects, the Department of Ecology has the opportunity to show how reductions in labor requirements, energy savings, water conservation, and improved water management can result in lower costs. These incentives lead to better financial planning and close coordination and cooperation with the Bureau of Reclamation which, in turn, spurs federal appropriations for potential projects.

NEW HYDROELECTRIC DEVELOPMENT

Major issue: Over the past 50 years, development of the state's hydroelectric power potential has benefited the citizens of the state immensely. But this development has not come without some substantial damage to fish, wildlife, and other resources dependent upon free-flowing rivers. In some cases, efforts to compensate for these damages are only now being undertaken. In the 1980s, there has been an overwhelming resurgence in interest in new hydroelectric development. WDOE is concerned about how to achieve appropriate hydroelectric development with minimum environmental impact, and how to efficiently carry out its regulatory responsibilities in view of a vastly increased workload in this area.

Authority/Background: As the state's primary water planning, allocation, and management agency, WDOE is charged with administration of laws which place permit requirements on hydro project development. Under the surface water code (Chapter 90.03 RCW), permits required to develop a hydropower project may include a permit to appropriate public waters (water right), a reservoir permit, and dam safety approval. RCW 90.03.247 provides WDOE with exclusive authority to determine minimum instream flows as conditions on new water rights. Moreover, state law also sets forth the following powers and duties of the department:

"To prepare the views and recommendations of the state . . . on any project . . . relating to the . . . development . . . of any waters located in or affecting the state . . . , including any federal permit or license proposal" (RCW 43.27A.090, see also RCW 43.21A.060).

Because nearly all new hydroelectric projects intended for commercial power production require a license or other approval from the Federal Energy Regulatory Commission (FERC), this is a significant responsibility.

Interest in new hydroelectric development has been stimulated by various federal tax and regulatory incentives enacted since 1978. Although court decisions, regulatory decisions, and market (economic) conditions have diminished incentives and slackened the feverish pace of activity to some degree, development activity is still well in excess of that which occurred during the 1960s and 1970s. As of September 1984, WDOE is aware of more than 600 proposals for new hydro development in Washington State. As further evidence of the renewed interest in hydro development, many of the proposals involve potential developers competing for the same site.

This "gold rush" for new hydroelectric development has run into some difficult obstacles in the 1980s. Perhaps foremost among these is the lack of a market for new power, given the current electrical energy surplus in the region. However, despite the regional surplus, several large utilities are actively seeking new resources to gain independence from the Bonneville Power Administration, the regional federal energy marketing agency. These utilities, however, are looking for favorable terms and for projects over which they can obtain long-term control. High interest rates, lower than expected returns, and delay and uncertainty

over BPA purchases of project output have contributed to the developer's difficulties and made financing difficult to obtain.

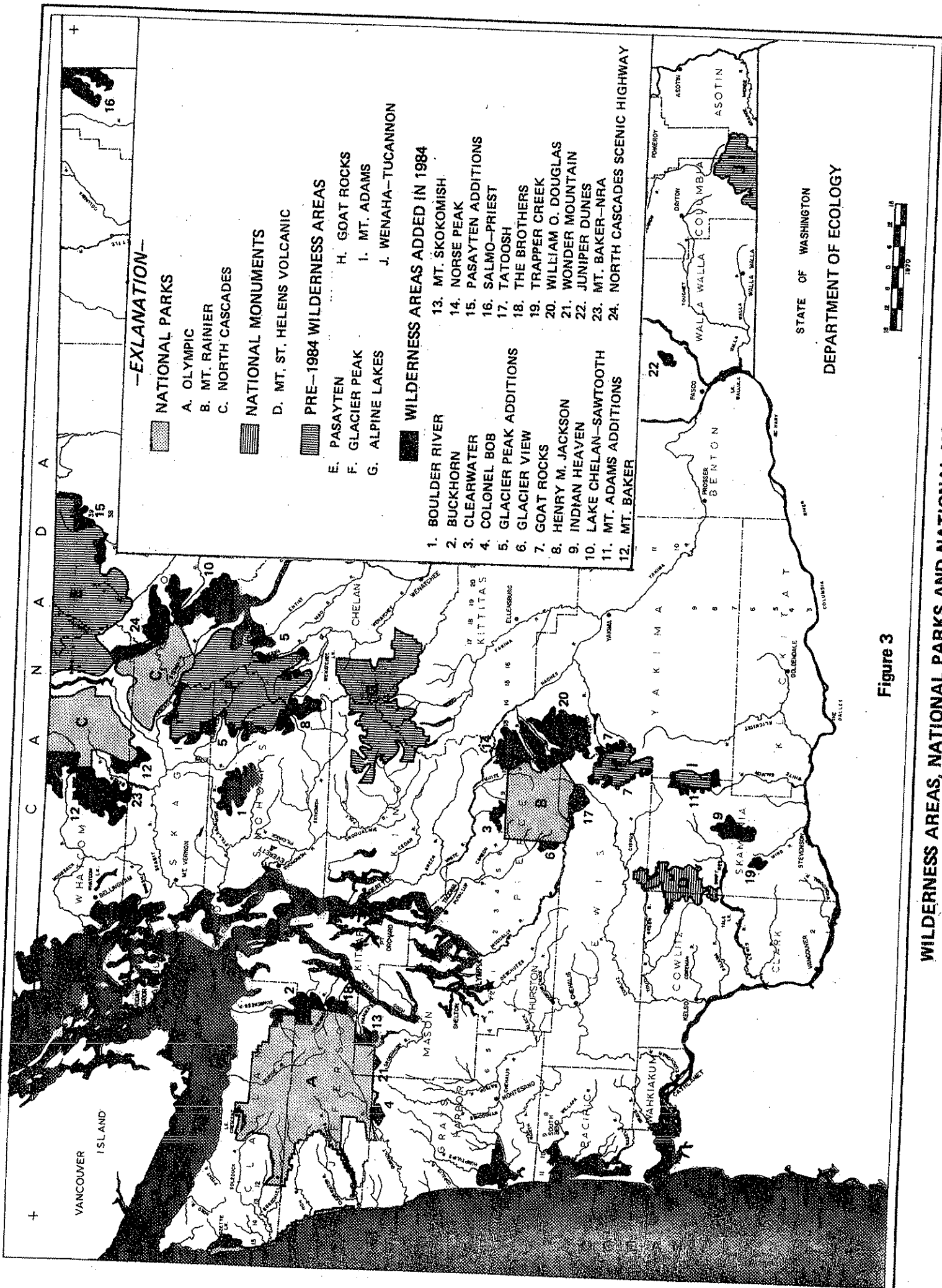
Institutional factors have also predictably tempered the boom. Regulatory agencies have the difficult job of sorting out the less environmentally damaging projects from those that are less desirable. Numerous lawsuits over rules adopted by the FERC and over specific projects have slowed the approval process considerably. Projects located in a number of Washington river basins have been delayed pending resolution of the issue of whether FERC should consolidate its proceedings on the numerous projects in those basins and analyze any cumulative environmental impacts that could result from the construction and operation of those projects. The Washington Wilderness Act, passed in 1984, also served to eliminate some proposed projects from further consideration. Current Wilderness Areas, National Parks, and National Monuments are shown in Figure 3.

Hydroelectric development proposals range in size from "back yard" systems of a few kilowatts to additions to major existing dams of several hundred megawatts of capacity. Some proposals would restore power to abandoned systems; others add power to existing nonpower dams. Still others involve entirely new facilities. Each proposed project presents a unique combination of technical, economic, environmental, and social considerations.

Proposed hydroelectric development tends to be focused in the mountainous regions of the state drained by steep gradient rivers and streams. Very few reservoir projects involving a high dam and significant storage are being proposed for nonfederal development. Most of the projects proposed in Washington State are run-of-river designs involving a new or existing low dam with little or no usable storage, a pipeline or penstock of some length, and a new powerhouse. These projects typically remove water from a stream and bypass it for a distance of one-half to five or more miles and utilize the natural elevation fall of the stream to produce power before returning the water to the stream.

WDOE considers these projects to be consumptive water uses with respect to the bypassed reach of stream, though they are nonconsumptive for the stream below the powerhouse. Often the most critical issue affecting the economic feasibility of these projects is the level of instream flow to be bypassed. High instream flow requirements can easily render a project economically infeasible but flows adequate to protect and preserve instream values are necessary to avoid potentially severe environmental effects resulting from a project. Because the majority of the recent proposals are based upon a diversion design, rather than impoundment, the environmental effects of creating large new reservoirs are replaced by the need to protect fish and wildlife habitat, recreation and aesthetic values, and other instream values in the stream reach bypassed by the diversion. Most of the hydropower proposals are located on smaller streams where minimum flows may not have been adopted as part of WDOE instream resource protection programs. Thus, minimum flows often must be determined on a case-by-case basis.

After consulting with the departments of Fisheries and Game, WDOE has exclusive authority and responsibility to issue water appropriation permits



including minimum flow requirements. As a multi-objective agency, WDOE is charged with allocating such rights in the overall public interest, considering instream values, out-of-stream use values (such as hydropower), as well as public safety, flood damage reduction, and other considerations. WDOE must, therefore, seek a balance such that resources are adequately protected while environmentally sound hydropower projects are allowed to proceed without unnecessary delay.

The state departments of Game and Fisheries, on the other hand, are directed to protect and enhance fish and wildlife values. Their policies, together with those of the federal fisheries agencies and Indian tribes, are to advocate optimum instream flows for fish and wildlife, to accept no net loss of fish habitat, and to generally not accept off-site or hatchery mitigation of losses. Under the U.S. Fish and Wildlife Coordination Act, these agencies (except Indian tribes) are accorded special status (not enjoyed by WDOE) regarding projects requiring a federal permit or license, such as a hydropower project. As a result, the Federal Energy Regulatory Commission often gives considerable weight to the recommendations of these agencies when determining license terms and conditions. For certain classes of projects eligible for an exemption from full federal licensing, the recommended terms and conditions of these agencies must be accepted by the developer. Because of its mandate to consider all beneficial uses, WDOE does not always agree with the instream flow recommendations of these single purpose entities.

WDOE has acted as a mediator on occasion in an attempt to identify instream flow levels adequate to protect the resources that will allow worthy projects to proceed. Projects that are most likely to encounter agency resistance in Washington are those located within or affecting portions of a stream accessible to anadromous fish.

Accomplishments: WDOE's accomplishments during the past biennium generally fall into two categories:

1. Project review, evaluation, coordination, permit issuance, and;
2. Revision of a hydropower licensing guidebook.

Other activities related to federal hydropower licensing are discussed under "Representing the State's Interests" (see page 16).

Project Review: WDOE plays an important role in the review and approval of proposed hydropower projects. WDOE's goal has been to seek early identification and resolution of potential problems with proposed hydro projects. Experience has shown that inexpensive design changes can often be made at the early stages of project planning. Such changes often avoid unnecessary environmental impacts, vastly simplify the licensing process. Among the activities of WDOE in the past biennium are the following:

- developed and maintained a computer inventory of proposed projects

- met with prospective developers to seek early identification and resolution of problems
- provided information on permit requirements
- intervened in Federal Energy Regulatory Commission license proceedings for projects of special concern to WDOE
- reviewed and provided comments to proponents and FERC regarding numerous license applications, EISs, and other documents.
- prepared EIS's for projects involving significant new reservoirs
- reviewed biological and hydrologic data and established minimum flows
- expedited permits under the Environmental Coordination Procedures Act (ECPA) when requested by an applicant
- issued water right permits including instream flow provisions
- reviewed and approved plans for safety of new dams
- ensured compliance with flood control plans
- ensured maintenance of water quality
- reviewed local shoreline decisions and permits

Beginning in July 1982, budget reductions required a reduction of effort for all but the mandatory statutory activities of processing of water right applications, dam safety approval, and preparing environmental impact statements when WDOE is the designated lead agency under the State Environmental Policy Act.

Licensing Guidebook: In recognition of the complexity of the hydropower licensing process, WDOE, in cooperation with the Washington State Energy Office (WSEO), published a guidebook in 1981 to aid prospective developers in understanding the licensing process and the key areas of environmental concern that must be considered in project design. Titled Developing Hydropower in Washington State - A Guide to Permits, Licenses, and Incentives (WDOE 81-1), this guide proved to be very popular. Two thousand copies of the guide were printed and distributed. WSEO and WDOE are working on a revised edition of this report which is scheduled for distribution in December, 1984.

Table 8 shows the location by WRIA of proposed hydropower projects in Washington. WDOE maintains a computer listing of these projects including project size, location, proponent, and federal and state permitting status. The list is updated monthly.

Table 8

Distribution of Proposed Hydroelectric Projects
in Washington State

<u>WRIA</u>	<u>WRIA Name</u>	<u>No. of Projects</u>	<u>Percent of Total Projects Statewide</u>
1	Nooksack	57	9.2
2	San Juan	1	0.2
3	Lower Skagit	11	1.8
4	Upper Skagit	98	15.8
5	Stillaguamish	30	4.8
6	Island	0	0
7	Snohomish	106	17.1
8	Cedar-Sammamish	2	0.3
9	Duwamish-Green	3	0.5
10	Puyallup-White	17	2.7
11	Nisqually	2	0.3
12	Chambers-Clover	0	0
13	Deschutes	2	0.3
14	Kennedy-Goldsborough	2	0.3
15	Kitsap	2	0.3
16	Skokomish-Dosewallips	29	4.7
17	Quilcene-Snow	10	1.6
18	Elwha-Dungeness	10	1.6
19	Lyre-Hoko	4	0.6
20	Soleduck-Hoh	10	1.6
21	Queets-Quinault	4	0.6
22	Lower Chehalis	5	0.8
23	Upper Chehalis	1	0.2
24	Willapa	3	0.5
25	Grays-Elockoman	1	0.2
26	Cowlitz	55	8.9
27	Lewis	22	3.6
28	Salmon-Washougal	11	1.8
29	Wind-White Salmon	17	2.8
30	Klickitat	3	0.5
31	Rock-Glade	1	0.2
32	Walla Walla	0	0
33	Lower Snake	0	0
34	Palouse	2	0.3
35	Middle Snake	0	0
36	Esquatzel Coulee	3	0.5
37	Lower Yakima	3	0.3
38	Naches	9	1.5
39	Upper Yakima	13	2.1
40	Alkali-Squilchuck	1	0.2
41	Lower Crab	2	0.3
42	Grand Coulee	1	0.2
43	Upper Crab-Wilson	0	0
44	Moses Coulee	0	0
45	Wenatchee	13	2.1

<u>WRIA</u>	<u>WRIA Name</u>	<u>No. of Projects</u>	<u>Percent of Total Projects Statewide</u>
46	Entiat	1	0.2
47	Chelan	9	1.5
48	Methow	6	1.0
49	Okanogan	6	1.0
50	Foster	1	1.0
51	Nespelem	0	0
52	Sanpoil	1	0.2
53	Lower Lake Roosevelt	1	0.2
54	Lower Spokane	0	0
55	Little Spokane	6	1.0
56	Hangman	0	0
57	Middle Spokane	1	0.2
58	Middle Lake Roosevelt	2	0.3
59	Colville	1	0.2
60	Kettle	2	0.3
61	Upper Lake Roosevelt	8	1.3
62	Pend Oreille	<u>7</u>	<u>1.1</u>
	Total	618	100

GROUND WATER MANAGEMENT

Major Issue: Proper development, use, and regulation of our ground waters is a key to further economic growth and retention of a high quality of life for residents of many areas in Washington.

Authority/Background: Historically, ground water use and development occurred slowly where surface water was more accessible and less expensive to develop. As a result, the Ground Water Code (Chapter 90.44 RCW) was not enacted until 1945, nearly 30 years after the enactment of the Surface Water Code.

The Ground Water Code provides a means for regulating, controlling, and managing ground water through the issuance of water rights. Ground water management is becoming a major issue as surface waters approach full appropriation. In many areas of our state, the only source of water for increased irrigation and municipal supply is ground water. Specific examples are the Walla Walla area and the Eastern Columbia Basin. In many locations in our island counties, surface waters are not available, and limited ground waters provide the only available water source.

Accomplishments: Comprehensive ground water resources management was initiated by predecessor agencies of WDOE with enactment of the 1945 Ground Water Code. The earliest work on ground water consisted of investigations of its availability, demands on the resource, and potential problems. Investigations under a cooperative program between WDOE and the U.S. Geological Survey (USGS) have resulted in numerous water supply bulletins and other technical reports published by the USGS.

The Project Assistance and Investigation section of WDOE has been involved in the preparation of the following water resource-related reports:

- Ruling Upon the Declarations of Claim of Ownership and Claim of Rights to Withdraw Artificially Stored Ground Water (Duck Lake Ground Water Management Subarea;
- Water Development Policies Regarding Ground Water Mining and Protection of Works in the Nineteen Western States;
- Reconnaissance Ground Water Investigation for the City of Winlock Wells;
- Decreasing Streamflow and Possible Ground Water Depletion in the Sinking Creek Watershed, Lincoln County;
- Spooner Aquifer Test, Thurston County;
- Water Budget Analysis for the Buck Mountain Reservoir, San Juan County;
- Water Supply Study for Limekiln Village, San Juan County;

- Washington State Cooperative Observation Well Network;
- Hart Observation Well near Connell, Washington;
- Test Observation Well No. 17 (Sagebrush Flats);
- Pixlee Observation Well, Douglas County.

Current Ground Water Investigations: At present, ground water investigations under the cooperative program are being conducted in the Horse Heaven Hills area of south central Washington and Island County (Whidbey and Camano islands). In the Horse Heaven Hills, the objectives are to determine the availability of ground water and develop a computer model as a management tool to determine the effects of alternative development schemes. In Island County, the objective is to determine if ground water supplies are adequate and to evaluate the potential for sea water intrusion problems.

The Department of Ecology and the U.S. Geological Survey (USGS) are currently investigating the use of satellite imagery data and remote sensing techniques as part of an effort to determine the actual amount of ground water used for irrigation in eastern Washington. The satellite data, combined with random field checks, estimates of application efficiencies, climatic data, evapotranspiration, and soil types promises to be an extremely useful tool for calculating actual water use. Agriculture is the major water user in the Columbia Basin plateau and it is also the major economic enterprise throughout the area. Because of the availability of ground water and the arid to semi-arid climate, irrigation of crops is common. Extensive pumping began in the 1960s and in the last 20 years the amount of water used has increased dramatically. Proper management of the available water resources by WDOE and assessment of those resources by WDOE and the USGS require accurate definition of the areas currently irrigated by ground water and the amount of ground water pumped.

This study is part of a cooperative program between the WDOE and the USGS to determine the applicability of remote sensing to meet those information needs. This will include an analysis of pertinent work being done in remote sensing for crop identification and water use, and development of a methodology suited to our local needs and goals.

Observation Well Program: Another ongoing, cooperative activity with the USGS is the observation well program. Observations at a network of wells monitor changes in ground water levels in many of the state's principal aquifers. Since the beginning of the program in 1938, the number of wells in the network has varied. Currently, there are 68 wells in the network. Table 9 lists the number of observation wells in the state network by county. The water levels in these wells are monitored by the USGS. The USGS also monitors the water levels in a great many additional wells within specific project areas, such as the Horse Heaven Hills.

Table 9

OBSERVATION WELLS

County	1981-82	1983-84
Adams	4	11
Benton	4	3
Douglas	4	12
Grant	4	3
Grays Harbor	4	4
Kittitas	2	-
Klickitat	4	9
Lincoln	15	21
Walla Walla	4	4
Whitman	-	1
Totals	45	68

In addition to the observation wells listed above, the Department of Ecology monitors the water levels in over 800 privately owned wells in Eastern Washington, and also in 37 test wells which were drilled by the state in response to the drought in 1977. These test wells are located in the following counties: Benton (1), Douglas (1), Grant (1), Grays Harbor (1), Island (3), Kitsap (3), Lewis (12), Pacific (1), San Juan (1), Skagit (1), Snohomish (1), Spokane (2), Whatcom (2), Yakima (7).

Ground Water Subareas: These investigations and observation well readings provide data on water levels. The ground water code provides that WDOE: may designate ground water areas and subareas; may designate depth zones within these areas; and, may regulate withdrawals to maintain a safe sustaining yield. WDOE has designated three such ground water areas by regulation: the Odessa, Quincy, and Duck Lake subareas. These three subareas have a combined total area of approximately 3,155 square miles, which is approximately 4.6 percent of the state's 68,192 square miles.

Ground water management regulations have been adopted for the Quincy subarea and the Odessa subarea. The Odessa subarea management regulation (Ch. 173-128A WAC) was revised and updated in 1982. In 1983, the department took formal action on all of the pending ground water applications within the Odessa subarea. In all, 115 applications requesting water rights for 81,441 acres of irrigation were denied, and 10 applications requesting water for 594 acres of irrigation were approved. At that time, 183 active permits and certificates covering a total permitted area of 84,354 acres had been previously issued by the department since the adoption of the original subarea regulations in 1974. An additional 265 permits for the irrigation of approximately 97,500 acres predated the adoption of the subarea. The total authorized irrigation from ground water sources within the Odessa subarea is now approximately 182,500 acres.

The Quincy subarea management regulations (Ch. 173-124 WAC and Ch. 173-134A WAC) were revised in 1983. This regulation defines artificially stored ground waters, public ground waters, and shallow and deep management units within the Quincy subarea, and sets forth policies for their management. The artificially stored ground waters occur from seepage and percolation of Columbia Basin Irrigation Project waters originating from the Columbia River. Through October 1, 1984, the department issued a total of 1,051 permits for the withdrawal of approximately 177,000 acre-feet of artificially stored ground water for the irrigation of about 50,000 acres, which is the limit set by the regulations. The recent revisions to the regulations included the addition of well depth restriction exemptions and the removal of permit expiration dates from permits for artificially stored ground water, which had previously been 10 years from the date of issuance. As of October 1, 1984, seven exemptions from well depth restrictions had been issued, allowing farmers with insufficient water to deepen their wells in an attempt to tap more productive aquifers. The department is presently studying the availability of both public and artificially stored ground waters to determine whether the regulations should be further modified.

The Duck Lake subarea (Chapter 173-132 WAC) was established to develop a management program for artificially stored ground water. In a proposed order, the department has determined the amount of artificially stored ground water to which the Okanogan Irrigation District is entitled. Water rights are now being determined through a general adjudication process in order that the department can evaluate water availability and use in the subarea to administer pending and future state water right applications.

Walla Walla Basin: Ground water management policies are a major element of the basin management program adopted in 1977 for the Walla Walla River Basin. This was the first basin management program to treat ground water management in detail. It applied the concept of conjunctive use of surface water and ground water where the use of water during the low flow period may be augmented by the use of ground water which, in turn, is recharged during the higher flow periods of the year. The program established a provisional designation of the ground waters in the basalt aquifer for municipal water supply systems only, which expired on October 1, 1984. Walla Walla County has requested the WDOE to extend this designation until the year 2032. This will help ensure that the decline in the aquifer level is minimized. Also requested is a surface water reservation for Mill Creek, a tributary to the Walla Walla River. This reservation, if approved and ultimately developed by a new storage reservoir, would help supply the future municipal water supply needs of the Walla Walla urban area. These requests will be pursued through proposed amendments to the Walla Walla Basin Management Program which should be initiated in 1985.

Saltwater Intrusion: Saltwater intrusion problems have not yet required a complex management scheme. To prepare for anticipated problems, WDOE adopted a standard office procedure on the construction and use of coastal water wells. The U.S. Geological Survey and WDOE completed a study of saltwater intrusion problems in San Juan County and are conducting a

similar study in Island County. WDOE is completing test well drilling for the Island County study. Island County, in cooperation with the USGS and the WDOE, hope to develop a computer model which will enable prediction of saltwater intrusion problems.

Ground Water Management Regulations: The department is presently developing two new ground water management regulations, proposed Chapter 173-150 WAC, Protection of Withdrawal Facilities Associated with Ground Water Rights, and proposed Chapter 173-154 WAC, Protection of Upper Aquifer Zones.

The growth of the state of Washington's population and economy places greater demands on available water resources, including the state's ground water supplies. Current ground water laws and regulations, which are based on the "first in time is first in right" (prior appropriation) doctrine result in some uncertainties concerning the consequences of one water user's use or proposed use of the ground water interfering with another water user's use. The extent to which a water user's withdrawal facilities are protected and how such protection is obtained and enforced are not clear in all cases. Controversies concerning declining water tables, interference between withdrawal facilities, the degree of protection afforded by statute, and the procedures to be employed in the exercise of statutory authority are arising in many areas of the state. The intent of the proposed regulation, Chapter 173-150 WAC, Protection of Withdrawal Facilities Associated with Ground Water Rights, is to clarify relevant existing ground water management policies and to set forth the specific procedures to be followed by the department in the protection of ground water withdrawal facilities pursuant to Chapter 90.44 RCW.

In many parts of the state ground water aquifers exist at various depths below land surface. Such aquifers may demonstrate a natural hydraulic separation to a significant degree over local or regional areas as evidenced, in part, by differing hydraulic heads and variable responses to pumping stress. The upper aquifer or upper aquifer zone often will not yield water in sufficient or sustainable quantities for uses which require a large volume of water. Therefore, they have often been traditionally used for domestic water supplies, stockwatering, and other uses that require only minimal water supplies and for which it is not cost effective to tap deeper aquifers. Typically, the upper aquifers were developed earlier with later development occurring in the deeper aquifers by larger users. Further, the uppermost aquifers also commonly contribute to spring and stream flows. In some instances, the withdrawal of water from the lower aquifers causes the depletion of the upper aquifers through cascading waters in wells or simultaneous withdrawals from both upper and lower aquifers. In such cases, poor quality waters from one zone can also contaminate a different aquifer zone.

The purpose of the second proposed regulation, Chapter 173-154 WAC, Protection of Upper Aquifer Zones, is to establish and set forth the policies and procedures of WDOE for the protection of the occurrence and availability of ground water within the upper aquifers or upper aquifer zones where there are multiple aquifer systems. The department proposes to manage the state's ground water resources in a manner that protects,

to the extent practicable, the upper aquifers of multiple aquifer systems from depletions, excessive water level declines, or reductions in water quality, and which recognizes that the highest and best use of the waters of limited capacity aquifers may be for domestic, stockwater and other similar uses. This proposed regulation implements relevant portions of Chapters 90.44 and 90.54 RCW.

The department has discussed the proposed regulations at several meetings of the Ground Water Advisory Committee to the Senate Agricultural Committee. Public hearings on the proposed regulations were held during December 1984. It is anticipated that final regulations will be adopted in March 1985.

PUBLIC WATER SUPPLY RESERVATIONS

Major Issue: A fundamental concern expressed in the Water Resources Act of 1971 is that an adequate and safe supply of water be preserved and protected for human domestic needs.

Authority/Background: Under the present water appropriation system, the permittee is given specific time limits to complete his project and to put the water to full beneficial use. As a result, public water supply utilities have either been unable to ensure adequate future water supplies or have filed applications for permits with no intent to develop the source immediately. The department, in cooperation with the Department of Social and Health Services (DSHS), has adopted regulations which establish a process whereby any person may petition WDOE to reserve surface or ground water for future public water supply (Chapter 173-590 WAC). It is anticipated that most petitions will be for reservation of ground waters.

The department expects petitions for reservations of public water supply to be submitted from the following areas:

- | | |
|--------------------------------|--|
| 1. Tri-Cities | 6. San Juan County |
| 2. Spokane | 7. King County |
| 3. Burbank | 8. Pierce County |
| 4. Skagit County (Fidalgo Bay) | 9. Pacific County (Long Beach Peninsula) |
| 5. Island County | |

Accomplishments: The department has received petitions from the Thurston County metropolitan area (Lacey, Olympia, and Tumwater) and Clark County and is currently reviewing them for completeness and accuracy of data.

An environmental impact statement (EIS) has been prepared by Olympia, on behalf of the three cities, in compliance with the State Environmental Policy Act. This EIS will be used by WDOE in evaluating the petition and in deciding whether to proceed with the development of a proposed regulation to reserve the requested ground waters. If the decision is made to proceed, a proposed regulation will be developed in early 1985. WDOE hopes to complete evaluation of the Clark County petition and make a decision whether to proceed with regulation development as quickly as possible.

The department rejected a petition for a reservation of waters in Grant County due to the lack of waters available for further appropriation. In addition, Walla Walla County has requested a reservation for the Walla Walla urban area (see discussion pg. 38).

Problems Encountered: Budget and corresponding staff reductions have impeded WDOE's ability to keep up with the workload associated with the petitions received so far. Substantial processing delays have occurred. This has been frustrating not only to WDOE, but for the local governments who have submitted the petitions. WDOE has requested additional funds and staff to alleviate this problem. (See section entitled "A Look Ahead").

WELL DRILLERS LICENSING

Authority/Background: The Water Well Construction Act of 1971 (Chapter 18.104 RCW) requires the licensing of water well drillers and a report on each water well constructed. Chapter 173-160 WAC established minimum standards for construction and maintenance of water wells. Chapter 173-162 WAC provides for the annual licensing of water well drillers.

Accomplishments: During fiscal years 1983 and 1984, 60 new licenses were issued. Currently, there is a total of 925 active licenses.

Problems Encountered: For fiscal years 1984 and 1985, a headquarters position was established to administer the program. However, field regulation and enforcement receive minimal attention because no positions are budgeted for this activity. Recognizing funding and staff constraints, the department continues to solicit the cooperation and support of all members of the water well drilling industry in the administration of this program.

The 1985-87 biennial budget requests four FTE's to provide necessary staff in each regional office to protect the public health, welfare, and safety of the people through the regulation and licensing of water well contractors and operators, and the regulation of water well construction as it relates to the protection of the ground water resource.

ADJUDICATION OF WATER RIGHTS

Major Issue: The determination of existing rights to surface and ground waters is essential for effective management of the waters of the state. Such rights are determined through the conduct of general adjudications.

Authority/Background: The adjudication of water rights is a judicial determination of the nature and extent of existing water rights in a specific area. An adjudication proceeding is initiated by an administrative agency of the state government, presently WDOE, filing a quiet title action in the appropriate county superior court against all parties claiming water rights. Each right or claim of right, along with any supporting evidence, is reviewed by the superior court and a determination made as to its validity, priority, and quantity. Upon completion of the adjudication proceeding, those parties whose rights are confirmed will be issued certificates of adjudicated water right.

Specific procedures for the general adjudication of surface water rights were first established by the Legislature in 1917 with the enactment of the Water Code (Chapter 90.03 RCW).

The 1945 Ground Water Code (Chapter 90.44 RCW) provided that such procedures also be applied for the adjudication of rights to the use of the ground waters of the state.

Figure 4 illustrates the general procedures of an adjudication. Actions by WDOE are enclosed in boxes.

Accomplishments: Adjudications have proceeded fairly slowly in the State of Washington. After a flurry of activity immediately following enactment of the Water Code, the number of adjudications decreased considerably from the 1940s to the mid-1970s. While 56 adjudications were completed prior to 1940, only 19 have been completed since. (See Figure 5.)

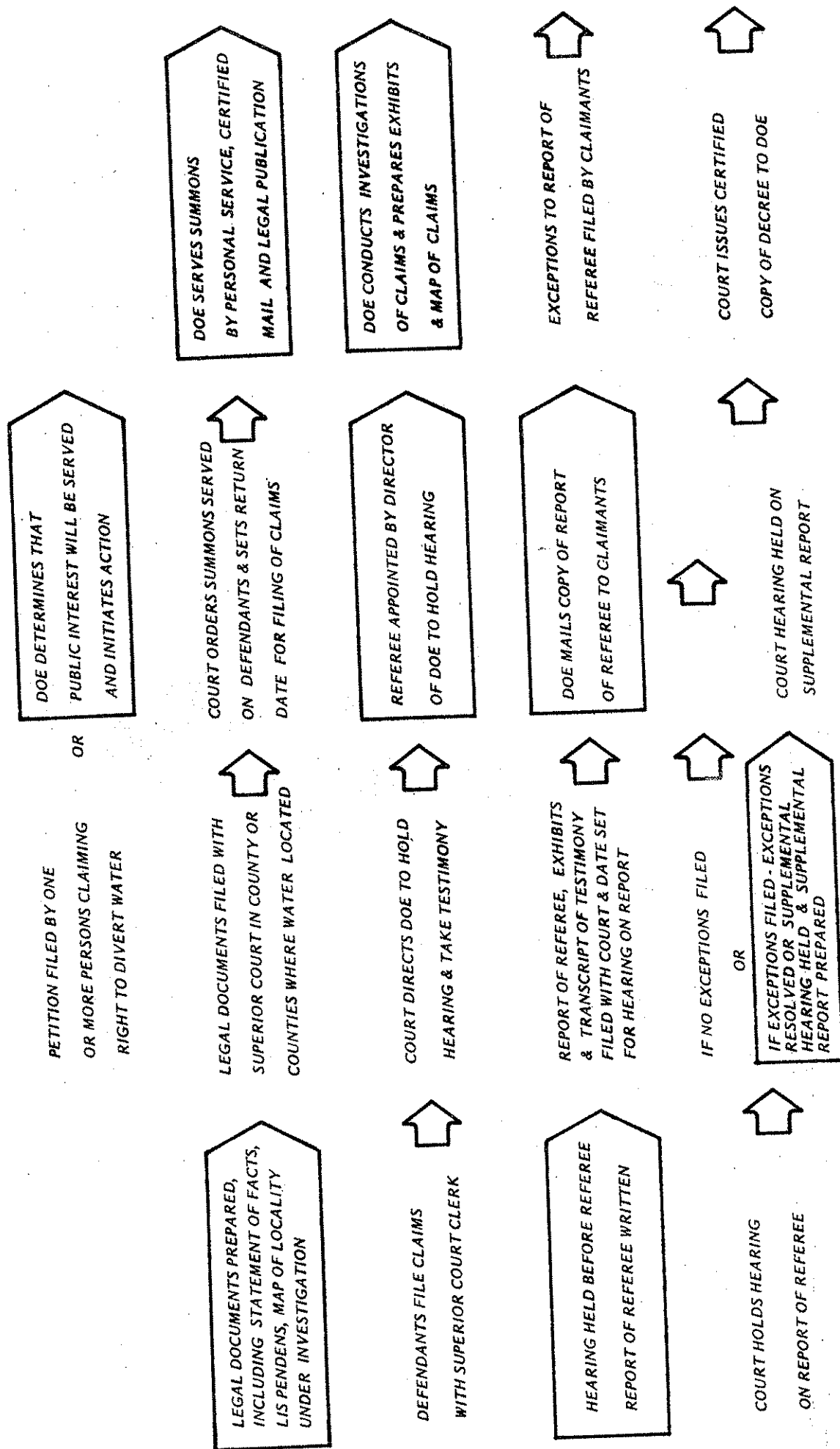
Drought conditions in 1977 and 1979 created statewide concern about the availability of water and led to a legislatively supported revitalization of WDOE's adjudication program. Both funding and staffing were increased to deal with numerous petitions for adjudication of apparently over-appropriated streams. Since then, however, a series of comparatively good water years has led to a reduction in demand for departmental adjudication actions. The department has responded to this reduction by gradually shifting emphasis from initiating new cases to concentrating on the resolution of those already in progress, particularly the Yakima River Basin Adjudication.

During the current biennium, the Adjudication Section has initiated two new cases, completed three cases through the issuance of superior court decrees, completed two cases through hearings before a referee, completed field investigations preparatory to the holding of a hearing on another case, and has prepared to do the necessary field work on the Yakima River Adjudication. In the Yakima River Adjudication, past legal obstacles have been surmounted only to give rise to new ones with the result that progress remains slower than anticipated. Similarly, legal

Figure 4

ADJUDICATION PROCEDURE

RCW Chapters 90.03.110 -- .243



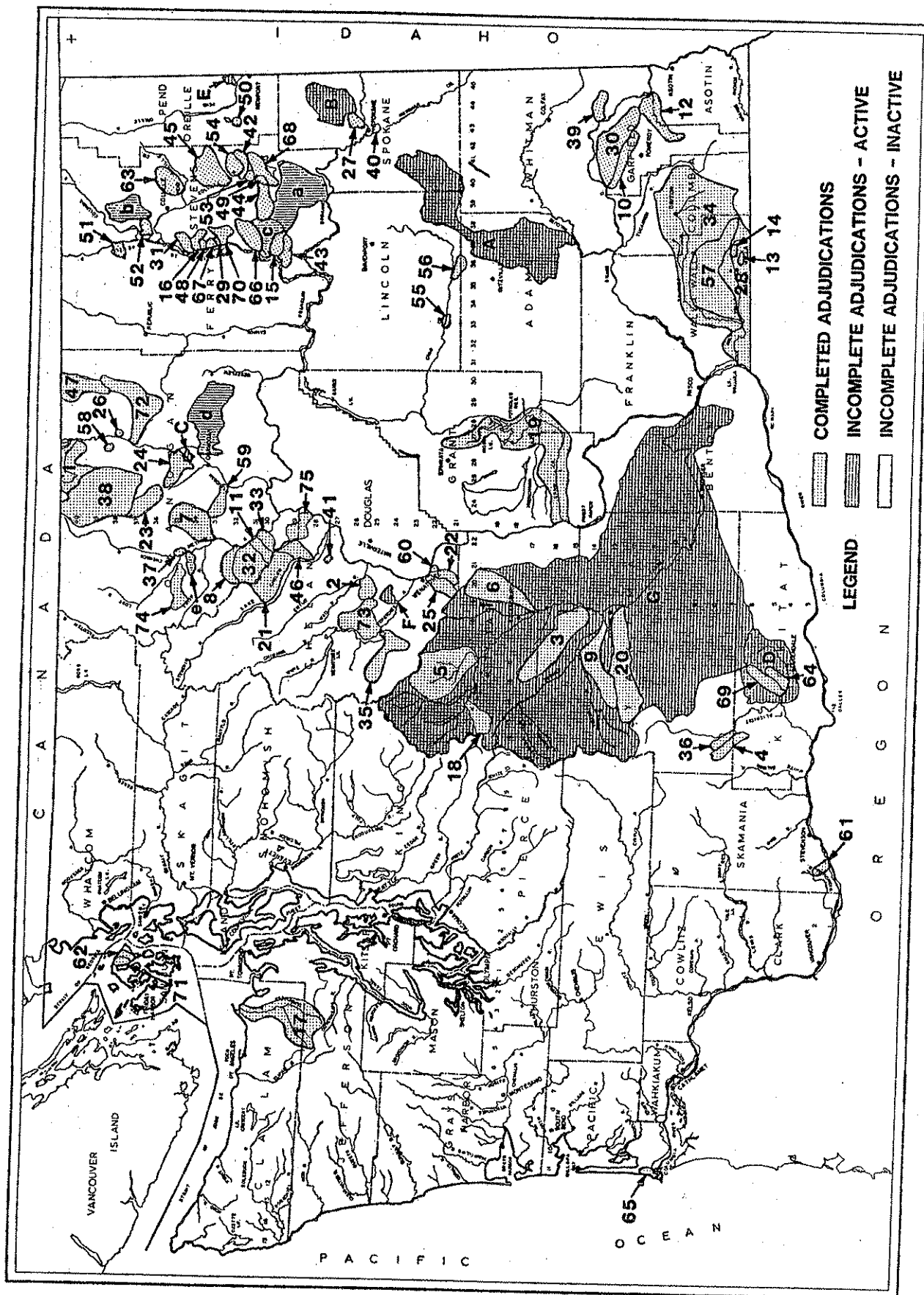


Figure 5
ADJUDICATIONS

appeals have forestalled the issuance of certificates of adjudicated water right in two of the cases for which superior court decrees have been issued. However, other than the Yakima River Adjudication, all of the adjudications listed as incomplete but active in Table 10 should be completed at least to the point of the issuance of court decrees during the upcoming biennium.

The current status of the seven active adjudications is summarized as follows:

1. Cow Creek, Sprague Lake, and tributaries (Adams, Lincoln, Spokane, and Whitman counties): The hearing before the Referee has been held and the Report of Referee prepared and distributed to all claimants.
2. Deadman Creek and tributaries (Spokane County): Both the Order of Remand to the Referee and Partial Summary Judgment by the Spokane County Superior Court were appealed to the Washington State Supreme Court by WDOE. A hearing was held in November 1984.
3. Duck Lake Ground Water Management Subarea (Okanogan County): The field investigations of claims has been completed and preliminary work is underway prior to the hearing before the Referee.
4. Little Klickitat River and tributaries (Klickitat County): The issuance of a final decree is being held up pending the outcome of WDOE's appeal of the general issues in the Deadman Creek adjudication.
5. Marshall Lake, Creek, and tributaries (Pend Oreille County): A hearing has been held and the Report of Referee is being prepared.
6. Nahahum Canyon and tributaries (Chelan County): A supplemental hearing ordered by the Chelan County Superior Court has been held and the Supplemental Report of Referee is being prepared.
7. Yakima River and tributaries (Benton, Kittitas, Klickitat, and Yakima counties): The matter has been referred to WDOE and a Referee has been appointed. A plan for efficiently and effectively dealing with the large number of claimants in this action has been presented to and tentatively approved by the Yakima County Superior Court. The court has also established a timetable for the briefing and hearing of several very significant jurisdictional and procedural motions which must be resolved prior to the commencement of field investigations and hearings.

Problems Encountered: The primary problems encountered in the present pursuit of adjudication activities tend to be procedural in nature. The types of adjudications undertaken at present frequently involve many more claimants than those of the past. WDOE's current approach to adjudication is, whenever practicable, to include all possible claimants to both surface and ground waters and thereby avoid any necessity of having to adjudicate an area twice. The inclusion of claimants to ground water tends to add many more parties to a particular case. The larger number

STATUS OF ADJUDICATIONS

COMPLETED ADJUDICATIONS

Name of Watercourse	Date of Decree	County	Name of Watercourse	Date of Decree	County
01 Similkameen River	11/26/18	Okanagan	66 Harvey Creek	01/04/74	Stevens
02 Roaring Creek	10/24/19	Chelan	67 Hagee Creek	01/04/74	Stevens
03 Wenas Creek	02/23/21	Yakima	68 Grouse Creek, Jumpoff Joe	07/25/75	Stevens
04 Bird & Frazier Creeks	03/14/21	Klickitat & Yakima	69 Hill Creek	10/19/76	Klickitat
05 Teanaway River	06/16/21	Kittitas	70 Stranger Creek	07/14/78	Stevens
06 Cooke Creek	08/12/25	Kittitas	71 Cascade Lake	08/31/78	San Juan
07 Beaver Creek	09/20/21	Okanagan	72 Bonaparte Creek & Lake	12/14/79	Okanagan
08 Libby Creek	11/18/21	Okanagan	73 Chumstick Creek	04/12/83	Chelan
09 Cowiche Creek	05/18/22	Yakima	74 Wolf Creek	03/13/84	Okanagan
10 Meadow Gulch Creek	06/12/22	Garfield	75 Antoine Creek	04/16/84	Chelan & Okanogan
11 McFarland Creek	11/16/22	Okanagan			
12 Alpowa Creek	03/23/23	Asotin & Garfield			
13 Upper Stone Creek	07/10/23	Walla Walla			
14 Doan Creek	11/01/23	Walla Walla			
15 Alder Creek	02/19/24	Stevens			
16 Cheveka Creek	02/19/24	Stevens			
17 Dungeness River	03/07/24	Clallam			
18 Big Creek	03/27/24	Kittitas			
19 Crab Creek & Moses Lake	05/05/24	Yakima			
20 Antium Creek	05/07/25	Chelan			
21 Safety Harbor Creek	06/20/25	Chelan			
22 Steamit Creek	01/22/26	Okanagan			
23 Salmon Creek, North Fork	04/06/26	Okanagan			
24 Johnson Creek	05/20/26	Okanagan			
25 Squillchuck Creek	06/14/28	Okanagan			
26 Lower Antoine Creek	07/09/28	Spokane			
27 Bigelow Gulch Creek	08/31/28	Walla Walla			
28 Walla Walla River	08/12/28	Stevens			
29 Corns Creek	10/03/28	Garfield			
30 Deadman Creek	01/04/29	Stevens			
31 Quiliscut Creek	01/19/29	Okanagan			
32 Gold Creek	05/07/29	Okanagan			
33 Black Canyon Creek	06/20/29	Okanagan			
34 Touchet River	09/19/29	Columbia & Walla Walla			
35 Icicle Creek	10/28/29	Chelan			
36 Bacon Creek	02/20/30	Klickitat & Yakima			
37 Bear Creek & Davis Lake	05/14/30	Okanagan			
38 Sialahakin Creek	05/20/30	Okanagan			
39 Wawawai Creek	03/03/31	Whitman			
40 Crystal Springs	03/05/31	Spokane			
41 Johnson Creek	05/23/31	Chelan			
42 Sherwood Creek	06/13/31	Stevens			
43 Oropahan Creek	10/31/31	Stevens			
44 Deer Creek	01/16/32	Stevens			
45 Chevelah Creek	10/15/32	Stevens			
46 Joe Creek	11/26/32	Chelan			
47 Myers Creek	11/26/32	Okanagan			
48 Jennings Creek	06/26/33	Stevens			
49 Hoffman Creek	08/18/34	Stevens			
50 Little Calispel Creek	06/12/35	Pend Oreille			
51 Twin Creek	05/29/36	Ferry			
52 Pinston Creek	07/01/36	Stevens			
53 Bull Dog Creek	03/09/38	Stevens			
54 Thomson Creek	05/11/38	Stevens			
55 Crab Creek, between Sylvan Lake & Odessa	06/21/39	Lincoln			
56 Crab Creek, South Fork	07/06/39	Lincoln & Adams			
57 Dry Creek	05/20/52	Walla Walla			
58 Whitestone Lake	05/21/56	Okanagan			
59 Chilliist Creek	05/16/67	Okanagan			
60 Cummings Canyon	08/21/67	Chelan			
61 Spring Creek	10/20/70	Skamania			
62 Mountain Lake & Cascade Creek	12/08/70	San Juan			
63 Narcisse Creek	02/28/72	Stevens			
64 Blockhouse Creek	06/01/72	Klickitat			
65 Black Lake-Tarlatt Slough	11/09/73	Pacific			

COMPLETED ADJUDICATIONS (Continued)

Name of Watercourse	Date of Decree	County
66 Harvey Creek	01/04/74	Stevens
67 Hagee Creek	01/04/74	Stevens
68 Grouse Creek, Jumpoff Joe	07/25/75	Stevens
69 Hill Creek	10/19/76	Klickitat
70 Stranger Creek	07/14/78	Stevens
71 Cascade Lake	08/31/78	San Juan
72 Bonaparte Creek & Lake	12/14/79	Okanagan
73 Chumstick Creek	04/12/83	Chelan
74 Wolf Creek	03/13/84	Okanagan
75 Antoine Creek	04/16/84	Chelan & Okanogan

INCOMPLETE ADJUDICATIONS: ACTIVE

Name of Watercourse	County
A Cow Creek & Sprague Lake	Adams, Lincoln, Spokane, Whitman
B Deadman Creek	Spokane
C Duck Lake Ground Water Subarea	Okanagan
D Little Klickitat River	Klickitat
E Marshall Lake & Marshall Creek	Pend Oreille
F Nahahum Canyon	Chelan
G Yakima River	Benton, Kittitas, Klickitat, Yakima

INCOMPLETE ADJUDICATIONS: INACTIVE

Name of Watercourse	County
a Chamokane Creek	Stevens
b Clugston Creek	Stevens
c Hunters Creek	Stevens
d Omak Creek	Okanagan
e Thompson Creek	Okanagan
f Wilson-Naneum Creek	Kittitas

PETITIONED AREAS

Name of Watercourse	County
Aeneas Creek	Okanagan
Brender Canyon	Chelan
China Creek	Stevens
Clover Creek	Pierce
Crab Creek	Adams, Grant, Lincoln, Spokane
Eagle Creek	Clallam & Jefferson
Hawk Creek	Lincoln
Little Spokane River	Pend Oreille, Spokane, Stevens
Marshall Creek	Spokane
Mattson Creek	Ferry
Minter Creek	Kitsap & Pierce
Mission Creek	Chelan
Moses Coulee	Douglas & Grant
Ohop Creek and Lake	Pierce
Palouse River	Adams, Franklin, Grant, Lincoln, Spokane
Snow Creek	Clallam & Jefferson
South Prairie Creek	Pierce
Tennille Creek	Whatcom
Wilson Creek	Grant & Lincoln
Unnamed Spring	

of claimants increases the amount of work necessary to progress in all phases of the adjudication process. Additionally, any increase in the number of claimants creates greater potential for dissatisfaction which, in turn, leads to the possibility of an increased number of appeals. This appears to be the case today as almost all of the active cases either are now or have been under appeal.

Other types of legal delays, such as jurisdictional and procedural motions, have also served to increase the time required to complete an adjudication. Because the court delays cannot be avoided, members of the Adjudication Section have sought to speed up those parts of the adjudication process over which they have control to try and reduce an otherwise expanding time frame for completing an adjudication. Several different procedures have been tried with an eye towards developing a quick yet efficient means of dealing with the claims of a large number of parties. The objective is to incorporate successful components of the different procedures into an improved method which can be used for all future adjudications, large or small.

WATER ALLOCATION

Major Issue: The major issue is a need for a continuing program to allocate public surface and ground waters through issuance of water rights. In addition, there is a need to continue and enhance the existing program for management of these waters. Within the major issue are various subissues relating to water availability determinations such as lowering of water tables, interference with existing water rights, enforcement, hydropower development, instream flow requirements, artificially stored ground waters, ground water subareas, salt water intrusion, etc. Many of these subissues are discussed elsewhere in this report.

Authority/Background: The primary authority for this program element is the 1917 Surface Water Code (Chapter 90.03 RCW), and the 1945 Ground Water Code (Chapter 90.44 RCW). The Water Resources Act of 1971 (Chapter 90.54 RCW) as well as other statutes and regulations, is also used in the administration of this program.

Accomplishments: During fiscal years 1983 and 1984, the department received 2,000 applications, issued 2,200 permits, and issued 2,200 certificates for the appropriation of water. For the first six months of fiscal year 1985, approximately 500 applications were received, 350 permits were issued, and 400 certificates were issued.

There were many other specific accomplishments in the water allocation program which relate to other programs that are discussed elsewhere in this report. Many of these activities pertain to evaluation of surface water and ground water availability in specific areas of this state. When this information is compiled, it is used in the evaluation process prior to taking action on water right applications.

Problems Encountered: One of the continuing problems is the backlog which has developed in the processing of water rights. The backlog is a large number of water right applications which have been received and for which a decision has not been made regarding whether or not a permit should be issued. During the two-year period from July 1, 1982 to June 30, 1984, the backlog was reduced by approximately 200, as 200 more permits were issued than applications received. The backlog is now approximately 2,000 applications.

The major problem which results from a large backlog is the extended time involved before action can be taken on new applications for water rights. This delay may cause financial hardship for the individual applicant and for the state as a whole. This often results in inquiries and/or complaints from applicants which compounds the delays in processing applications because of the staff time required to respond to these inquiries and/or complaints.

Not all of the backlog is a result of the large number of applications. Many of the applications considered in the backlog are being held for various reasons relating to water availability determinations, adjudications, instream flow considerations, Indian reservations, etc. Only when the reasons for these "holds" are removed can these applications be processed.

Budget and staff reductions during the present biennium have had an effect on the backlog, and, at best, the backlog can be expected to stay at the current level. For example, recent reductions necessitated closing the Colville and Mount Vernon offices with a loss of direct public service to the citizens of those areas.

Effective ground water management requires investigations of the resource available for future use and the monitoring of existing use. Funding cuts have reduced the cooperative effort with the USGS in areas where intensive ground water management is expected to be needed in the future. Previous experiences have clearly shown that problems develop where ground water permits have continued to be issued without a thorough knowledge of the resource available.

There is a need for supplemental funding for ground water investigations. WDOE's budget request for the FY 84-87 biennium includes a request for new investigations - related positions. (See "A Look Ahead") Without such investigations, management of the ground water resources will lag behind the need for this activity and ground water problem areas will continue to develop and problems will become increasingly more difficult to resolve.

OTHER WATER RESOURCES MANAGEMENT ACTIVITIES

Water Rights Information System: The department is required to maintain records of all water right transactions related to the appropriation, diversion and use of all public waters of the state. In order to effectively conduct these activities, which currently involve more than 65,000 water right records, it was necessary to utilize computer capabilities for the timely extraction of information to meet various user needs.

The department's Water Rights Information System (WRIS) has been in existence since the early 1970s. In the 1982 Biennial Report to the Legislature, the department described the progress made in adding river mile and place of use data to the records in the data base. The records may each contain up to 200 individual data fields (pieces of information) describing water right applications, permits and certificates. The WRIS data base is used to provide data summaries of the total water rights issued for irrigation, domestic supply, commercial, municipal, power and other uses statewide or in any basin or geographic area, in addition to print-outs of the water right records by location. However, due to the nature of the software and hardware used, the additional river mile and place of use data was entered on separate tapes which must be accessed separately from the main data base, resulting in the necessity of separate print-outs for this information and restricting its usefulness.

The department is currently exploring the possibility of combining the two data bases (which would require extensive software modifications) or of transferring the data bases in their entirety to a new on-line data base format (which would require the purchase of additional software). The objective is to build the most efficient and useful system possible for keeping track of the state's water resource allocations.

In addition to the WRIS, the department also has a separate data base consisting of approximately 165,000 Water Right Claims records. The claims were filed during the period from July 1, 1969 to June 30, 1974, pursuant to Chapter 90.14 RCW (commonly known as the Water Right Claims Registration Act).

The department is presently engaged in a study to determine the best long range solution to problems encountered with entering, editing, retrieving, tracking, and summarizing the state's water rights and water right claims. Our goal is to provide a reliable tool for future water management and planning which can also be accessed for daily decision making needs.

Relinquishment: Relinquishment is a process whereby water rights or rights which have been granted, but are no longer used, revert to the state. Relinquishment of unused water rights has become increasingly important as more streams approach full appropriation, and will become critical as development and population increases and/or shifts.

Chapter 90.14 RCW (1967) provides procedures to formally record such relinquishments and defines how and when rights revert to the state.

The relinquishment portion of the statute provides that if any person entitled to divert or withdraw waters voluntarily fails, without sufficient cause, to divert or withdraw waters during any five or more successive years, he/she relinquishes all or part of the right. The right then reverts to the state, making those waters available for reappropriation in accordance with RCW 90.03.250.

Due to other higher priority tasks, the department has pursued relinquishment only when such actions are incidental to other water right activities. Future relinquishment activities are anticipated to continue in the same way. Over the last few years, about 75 water rights have been involuntarily relinquished through the implementation of Ch. 90.14 RCW. Most of these have been ground water rights.

Reserved Rights: During the last few years, a number of changes have occurred in the area of federal reserved water rights. These changes are generally the result of court cases. While such cases do not always involve WDOE directly, the decisions reached in them clearly do affect the state water resources management activities and policies. Because of this, the department feels that a thorough discussion of this topic is warranted.

The federal reserved water rights doctrine holds that when the federal government reserves land for a federal purpose, the government, by implication, reserves unappropriated water to the extent needed to accomplish the principal purposes of the reservation. The doctrine applies to Indian reservations and other federal reservations, including military reservations, national parks, monuments, forests, and wilderness areas. The priority date for federal reserved rights is the date the reservation was created, even if the rights go unexercised.

With approximately 15 million acres (or 35 percent of the state's total land area) within federal reservations in Washington, the existence of these generally unquantified and unrecorded federal rights creates serious water allocation and management problems, whether these rights are exercised or remain unexercised. If such rights become fully exercised by the federal government, an unknown proportion of the state's water will be under federal jurisdiction and the state will lose control over these waters within the borders of the reservations. Long established water rights and priorities established under state law could be terminated or otherwise impaired without compensation. Even if federal reserved rights remain unquantified and unexercised, the uncertainty about the quantity of water encumbered by federal reservations impedes effective, coordinated state water resource planning and management. The state cannot prepare long-term plans with any certainty without knowing when or if the federal government will preempt water resources for use on federally reserved lands.

In his address to the Western States Water Council in October 1984, Assistant Secretary of Interior Robert Broadbent projected that reserved rights issues are likely to explode in the next four years as negotiations, adjudications, and litigation proliferate. Since 1980, the U.S. Department of Interior has shown an increasing willingness to seek negotiated

settlements of Indian reserved rights issues. In the southwestern U.S., claims of the Ak Chin and Papago Indian tribes are being resolved and met by negotiated settlements. Many more cases throughout the western United States, however, are in litigation. A major question that clouds the potential success of negotiated reserved rights claims is who will be responsible for the costs of providing new water or for compensation of those parties whose water uses are displaced.

Indian reserved rights are generally a greater concern in Washington than other federal reserved rights. Most federal lands are in mountainous, headwaters areas (i.e. national forests, parks, monuments, and wilderness areas) and the nature of these reservations is such that water uses are relatively modest in scope (fire control and recreation for instance). Certain Indian reservations encompass great expanses of potentially irrigable land and land that could support other intensive tribal sponsored development. These uses could involve considerable volumes of water if brought under development. Because these rights would carry a priority date as of the date of the treaty establishing the reservation (generally the 1850s), these new uses could dislocate water rights without compensation that have been long established under state appropriation procedures.

Generally, federal reserved rights appear to be limited by the courts to the original principal purposes of the reservation. In the case of national forests, this could include water needed for forest and land management practices. For Indian reservations, this would probably include domestic and agricultural water supply but perhaps also water for fish propagation and industrial purposes. A 1978 U.S. Supreme Court Case, United States v. New Mexico, distinguished between the principal and secondary purposes of a national forest land withdrawal establishing the Gila National Forest and held that a reserved right existed only for the principal purposes, in this case to preserve timber and secure favorable water flows (watershed management), but not for such secondary purposes as aesthetics, recreation or stock watering. By implication, rights for secondary purposes are to be obtained from the state. Which purposes are primary and which are secondary for any reservation depends upon the language of the treaty or legislation establishing the reservation.

Two principal related issues in the swirl of controversy over federal and Indian reserved rights in the western United States are jurisdiction and quantification.

Courts are addressing many facets of the question of jurisdiction over reserved rights. A major jurisdictional issue is whether the state or federal courts are the proper venue for adjudicating the claims to federal and reserved rights. Though earlier cases were generally decided in federal court, with passage of the McCarran Amendment in 1952 Congress stated its intentions that Indian water rights are to be adjudicated in state courts. Indian and federal claimants have resisted this and have filed numerous cases in federal courts. These courts have consistently ruled that reserved rights are to be determined through the state general adjudication proceedings under the jurisdiction of state courts when state proceedings are currently in process and are capable of quantifying federal reserved rights.

Most recently, the U.S. Supreme Court ruled in Arizona v. San Carlos Apache Tribe, Northern Cheyenne Tribe v. Adsit and Montana v. Northern Cheyenne Tribe, that notwithstanding the so-called "disclaimer clause," reserved rights are to be determined in state courts. (The disclaimer clause, which appears in many states' constitutions, provides that a state's inhabitants disclaim all rights and titles to lands lying within Indian reservations, such lands remaining under the absolute jurisdiction and control of the United States.) The court found that the McCarran Amendment removed all such limitations placed on state court jurisdiction over Indian water rights. As a result of these decisions, actions brought in federal courts to quantify Indian reserved rights are generally to be deferred to state courts if a concurrent state adjudication proceeding is in progress.

Another jurisdictional issue is whether the state has jurisdiction over non-Indian water and water users within an Indian reservation. A related issue is whether Indian tribes may establish their own water codes affecting non-Indian water and water users on the reservation. These issues are being addressed in three cases in Washington; Holly v. Watson Totus, U.S. v. Anderson and Colville Confederated Tribe v. Walton and Washington State. These cases are discussed later in this section.

Federal reserved rights may be quantified by three different mechanisms: litigation, negotiation, or legislation (federal). Of these, litigation has been the most common. Negotiation or legislation may arise from the agreeable settlement of litigation or, more rarely, in the absence of litigation. A major difficulty in quantification is the continuing uncertainty as to the extent and applicability of the reserved rights. In cases arising in the arid southwestern U.S., quantification has frequently been based on an amount of water adequate to irrigate the "practicably irrigable acreage" on a reservation. Some observers argue that this is not the final word or ultimate standard on quantification. They believe this unreasonably limits Indian water rights and that the rights should also account for other Indian needs such as municipal, domestic, stock watering, fish propagation, recreation, instream flow, industrial and energy development uses. Under this system, Indian rights would be arguably "open-ended." Quantification issues can probably only be settled by further litigation and evolution of case law or by national legislation which in either case would establish guidelines for determining the extent of reserved rights.

Accomplishments: The Department of Ecology and the Attorney General's Office have been active in developing proposed federal legislation to resolve the friction between the United States and the states over the management and regulation of water resources. The thrust of this legislation as it relates to non-Indian federal reserved water rights is to (1) require binding quantification, (2) terminate unexercised reserved rights, (3) expand mechanisms and provide funding to states for adjudicating federal reserved rights, primarily in state courts, (4) integrate all federal reserved rights under the regulatory programs of the states, (5) pay compensation, in certain cases, to water right holders whose rights are impaired by a reserved water right, and (6) establish a detailed procedural mechanism for creating new reserved rights.

While developing and promoting its proposed legislative solution to the reserved rights issue, WDOE has also actively participated in the activities of several interstate organizations (particularly the Western States Water Council) in seeking resolution of the problem.

The department will continue to seek resolution of the federal reserved right issue through steps such as those specified in the proposed federal legislation outlined above. An inventory and binding quantification of federal reserved claims would eliminate fears and uncertainties about federal reserved water rights, promote more effective water resource planning, and promote more equitable treatment of holders of water rights granted under state law.

In order to expedite quantification of federal water claims, as well as clarification of water rights generally, it is recommended that state funding for general adjudications be maintained at a satisfactory level. The adjudication process is the only mechanism under existing state law which results in quantification of all rights in a basin, including federal reserved rights. (See the Adjudications section of this report.)

Washington will continue to participate in the activities of interstate organizations such as the Western States Water Council, Interstate Conference on Water Problems, Association of Western State Engineers, National Governors Association, and the Council of State Governments. Such organizations can be extremely effective in disseminating information and in representing unified state positions on issues such as federal reserved water rights. (See the section of this report entitled "Representing the State's Interests.")

In addition, in 1983 and 1984, the Department of Ecology was involved in several court cases related to various types of claims by Indians or the United States' claims for Indians.

In United States v. Anderson, U.S.C.A. (9th Cir.) Nos. 82-3625 and 82-3597, the Appeals Court upheld the contention of the State of Washington that state water right laws may be applied, in terms of issuance of water right permits, to waters excess to Indian reserved rights flowing in streams within an Indian reservation that have their origin outside the reservation's boundaries. In addition, the court provided that non-Indians could acquire reserved rights as an incident of purchasing an Indian allotment from the U.S. or a tribal member. The court also upheld a claim of the United States and the Spokane Indian Tribe of water rights for instream uses, including fishery uses, based on the federal reserved water rights doctrine. The court held that the tribe is entitled to use its water for any lawful purpose and that use for nonconsumptive purposes does not mean the tribe relinquishes any of its water rights.

The case was not appealed to the Supreme Court. As follow-up to the decision, the WDOE has initiated processing of applications for water rights that have been pending for several years. The department will be soliciting comments from the Spokane Indian tribe on these applications.

Colville Confederated Tribes v. Walton and Washington State, U.S.C.A. (9th Cir.) No. 83-4285 is under appeal to the Ninth Circuit Court. The major issue in this case relates to the water rights, claimed by a non-Indian purchaser (Walton), of an allotment formerly held by the U.S. for an Indian, for the purpose of irrigating lands along No Name Creek in the Colville Indian Reservation.

A 1980 decision of the Ninth Circuit Court upheld the district court decision finding that the State of Washington could issue permits for unappropriated water within the No Name Basin. In 1981, however, the Ninth Circuit Court reversed its 1980 decision, based primarily on the fact that No Name Creek is wholly contained within the Colville Reservation. The court conclusively determined that the state's regulation of water rights in the No Name Basin had been preempted by the creation of the Colville Reservation. The state was subsequently dismissed from the case.

The 1981 decision also remanded the case back to the district court to determine the extent of the water rights acquired by the non-Indian owner on the basis of Indian reserved rights appurtenant to the purchased lands. The district court allocated the waters of the basin among the Indians and Walton and for fish maintenance in the creek.

The Colville Tribe and the United States appealed to the Ninth Circuit Court contending that the allocation of water to Walton was improper on a variety of technical and legal grounds. The State of Washington has filed an amicus curiae brief asking that the court consider the unique situation of the case and to liberally construe "reasonable diligence" in its deliberations in order to allow non-Indian purchasers of former allotments some resource to obtain rights to water.

State of Washington, Department of Ecology v. Acquavella et al., Yakima Superior Court No. 77-2-01484-5. The purpose of this suit, brought by the state in October 1977, is to effect a general and comprehensive adjudication of the surface water rights of the Yakima River basin in Washington. In accordance with the 1952 McCarran Amendment (43 U.S.C. 666), the claims of the United States (including those for the Yakima Indian Nation) for federal reserved rights in the basin are included in the state adjudication.

The claim filed by the U.S. on behalf of the Yakima Indian Nation, based on fulfillment of the treaty of June 9, 1855 between the United States and the Confederated Tribes and Bands of the Yakima Nation, includes water for instream flows for fish, hunting, gathering and pasturing, all with a priority date of "time immemorial." Also claimed is sufficient water to irrigate all practicably irrigable lands of the reservation and water for recreational, municipal, and industrial uses with a priority date of June 9, 1855.

To date, these and other claims have not been adjudicated as the courts have been involved in the task of hearing and ruling upon various issues of a jurisdictional and procedural nature. Additional motions are scheduled to be heard by the Yakima Superior Court on January 28 and 29, 1985. Included is a motion by the United States requesting that ground water

users in the basin be joined in the adjudication, or else requesting that the United States be dismissed from the suit. The United States argues that its sovereign immunity is only waived in accordance with the McCarran Amendment in the case of a comprehensive general adjudication of water rights and the failure to include ground water rights using waters in hydrological connection with surface water results in the case not constituting a general adjudication. The State of Washington is preparing briefs for submittal to the court on this matter. (See also the section of this report entitled "Adjudications of Water Rights.")

In Kittitas Reclamation District v. Sunnyside Valley Irrigation District, U.S.C.A. (9th Cir.) Nos. 80-3505, 81-3002, 81-3068, 81-3069, the United States Court of Appeals for the Ninth Circuit issued an opinion upholding a federal district court decision, relating to waters within a federal reclamation project reservoir, which directed the Bureau of Reclamation to release stored waters to protect Indian fishery interests in the Yakima River Basin. The Court of Appeals relied upon a federal district court opinion in United States v. State of Washington (Phase II) which was on appeal to (but undecided by) the same federal courts of appeals. Appellants (several irrigation districts) requested rehearing before the entire Ninth Circuit court. The districts contend that the District Court order ordering water releases from storage infringes on water rights established in accordance with state law and affirmed by a 1945 consent decree among major water users of the Yakima basin. The State of Washington has filed an amicus curiae brief urging rehearing of the Court of Appeals' opinion rendered in the Kittitas v. Sunnyside case.

✓ In United States v. State of Washington (Phase II) U.S.C.A. (9th Cir.) No. 81-3111 -- the Boldt case -- the United States Court of Appeals modified the standards for review under a federal district court holding that a right to take fish, arising from a United States treaty with an Indian tribe, implied a right to have treaty fish protected from environmental degradation. In altering the standard, the Appeals Court considerably liberalized the potential scope of state activities and removed an absolute environmental servitude imposed by the district court. The Appeals Court required that the state and tribes take "reasonable means" to assure the protection of treaty fisheries. The court subsequently (in April 1983) granted a request by Washington Indian tribes for a rehearing before the entire Ninth Circuit Court.

✓ Holly v. Watson Totus, Confederated Tribes and Bands of the Yakima Indian Nation, U.S.D.C. (E.D., Wash.) No. C-78-02, U.S.C.A. (9th Cir.) No. 84-3541 is an important case on the issue of jurisdiction over water on Indian reservations. The Yakima Tribe adopted a comprehensive water rights code applying to all waters within its reservation including "excess waters" on non-Indian owned land. The State of Washington and individual plaintiffs seek to invalidate the code. At issue are the authority of the tribe to adopt and enforce a water code and the jurisdiction of the tribe over non-Indians.

In September 1983, the state's motion for summary judgment was granted by the District Court invalidating the code. This was based on a nonseverable criminal provision in the code found by the court to be improper.

In October 1984, the Ninth Circuit Court of Appeals ruled that the District Court went too far in invalidating the entire code because of the one improper provision. The Appeals Court did not rule on any substantive issues and returned the case to the District Court for disposition. A hearing is tentatively scheduled for April 1985.

PUBLIC SAFETY

DAM SAFETY

Major Issue: As stated in previous reports there is a continuing need for a comprehensive state dam safety program to assure safety to life and property. To implement such a program there is a need:

1. For adequate funding and staff capability to inspect all dams (that are not being inspected under federal authorities), both during construction and periodically thereafter for proper maintenance; to thoroughly review, analyze, and approve plans and specifications for dam construction; and to take appropriate emergency or enforcement action, where necessary.
2. To develop and establish appropriate state guidelines and standards for dam construction, operation, and maintenance.
3. To refine, update, and maintain the state inventory of dams and add a data base to establish a work scheduling, progress, and tracking system.
4. To develop a program to assure the timely repair or removal of unsafe dams.

Authority/Background: RCW 43.21.130 - Provides the Department of Ecology with powers and duties, insofar as it may be necessary to assure safety to life and property, to inspect the construction of all dams and all other works related to the use of water and to require necessary changes in construction or maintenance to reasonably secure safety to life and property.

RCW 86.16.035 -- Control of Dams and Obstructions -- provides that the Department of Ecology shall have supervision and control over all dams and obstructions in streams and may make regulations concerning the flow of water as necessary for the protection of life and property below these works from flood waters.

RCW 90.03.350 -- Plans and Specifications -- provides that anyone intending to construct or modify any dam or controlling works for the storage of 10 acre-feet or more of water shall submit plans and specifications to the Department of Ecology for approval as to safety. Any dam not constructed according to plans and specifications or not maintained as may be ordered shall be presumed to be a public nuisance and may be abated. It shall be the duty of the county prosecuting attorney to institute abatement proceedings against the owner when so requested by the Department of Ecology.

RCW 90.03.470 (8), (9) -- Fees for Inspection and Plan Approval -- provides for the collection of fees for dam inspections, based on the cost of the inspection, and fees for dam plan approvals, based on a minimum of ten dollars or the actual cost.

Chapter 90.54 RCW -- The Water Resources Act of 1971 -- requires an annual report to the legislature to identify unsafe dams, the attitude of the owners to correct the problems, and the costs of the modifications and/or repairs.

Accomplishments: During the 1983-85 biennium, the Dam Safety Section of the Department of Ecology continued efforts to correct deficiencies in 100 high hazard nonfederal dams that were inspected by the Seattle District of the Corps of Engineers under the National Dam Inspection Program (P.L. 92-367). As of June 30, 1984, the Dam Safety Section had contacted nearly all of the dam owners and studies or corrective actions had been initiated on most of these dams.

In addition, plans have been reviewed and approved during the biennium for the French Canyon Dam of the Yakima Tieton Irrigation District, the Dry Falls Dam, and Spokane upriver hydroelectric projects, and the Asamera gold mine tailings dam near Wenatchee. In total, about 80 plans for new dam construction or rehabilitation were reviewed during the biennial period.

Through fiscal year 1984, a total of about 1,000 projects had been documented in the inventory of dams for the state. This inventory includes dams that can store 10 or more acre-feet of water or that can impound water to a depth of 10 feet or more. Of the total, about 500 meet the size requirements specified for the National Dam Inspection Program (i.e. dam is 25 feet high and impounds at least 15 acre-feet of water, or reservoir contains a volume of 50 acre-feet and has an impounding structure at least 6 feet high).

Through a grant from the Federal Emergency Management Agency, the Dam Safety Section entered into three contracts in February 1984 to continue and complete a program of aerial surveillance to locate previously unknown dams. This effort was started during the national dam inspection and inventory program but was interrupted in 1981 when Corps of Engineers funding was terminated. Once identified from the air, section personnel will visit, inspect, and inventory the dams found through this work.

Problems Encountered:

Inadequate staffing of qualified professional personnel continued to be a problem during the biennium. Near the end of the biennium the section staff increased from two to three engineers. One part-time student intern was also employed during FY 1984. The outlook for the dam safety program is somewhat improved, however, with the passage of a supplemental budget in 1984 to acquire two additional engineers. The new personnel should allow the section to initiate a more comprehensive periodic dam safety inspection effort.

Research efforts to define appropriate spillway design standards continued during the biennium but at a slightly slower pace. Major storm data were compiled for western Washington during this period and work was started on the eastern Washington region.

Although slow, some progress was made toward the rehabilitation of unsafe dams. Funding of the needed repairs continues to be the major obstacle.

MOUNT ST. HELENS

Major Issues: There is still a need to prevent further loss of life or damage to property due to potentially catastrophic flooding in the Cowlitz and Toutle rivers as an aftermath to the May 1980 eruption of Mount St. Helens.

Authority/Background: The Washington Department of Ecology (WDOE) has limited authority in this area because of Senate Bill 3519 which was passed during the 1983 legislative session (relating to Mount St. Helens). This law essentially preempted any existing regulatory authority because of the emergency situation and it continues in effect until June 30, 1988.

Accomplishments: The Department of Emergency Management has been designated by the Governor to be the lead agency for the state for all Mount St. Helens activities, but WDOE has been heavily involved in many of the activities. Examples of accomplishments during the reporting period are as follows:

- Participation in the various task forces and legislative committees that have been set up to deal with all issues related to Mount St. Helens.
- Location of a new water source for communities adjacent to the Cowlitz and Toutle rivers whose water sources are affected by the mudflow. Water right permits have been issued and construction is underway.
- Preparation of a cooperative agreement with the U.S. Geological Survey using monies from the Governor's emergency fund for construction and operation of monitoring equipment for water levels in the North Fork Toutle River Basin to provide an early flood warning system.
- Installation of a pump system on barges in Spirit Lake to prevent early overflow of Spirit Lake. In the meantime, a tunnel is being constructed through Harry's Ridge to Coldwater Lake to provide a permanent solution to the Spirit Lake problem.
- Feasibility studies are now underway to solve the siltation problems in the Toutle, Cowlitz, and Columbia rivers. The preferred alternative is to build a dam on the North Fork Toutle River just above the confluence of the Green River.

Problems Encountered: The WDOE has been involved only from a peripheral standpoint because of the lead role of the Department of Emergency Management, so the major problems are being dealt with by other agencies.

The primary problem to WDOE is the workload impact to the staff caused by the need to participate on task forces and committees to keep abreast of the latest activities.

PUBLIC INVOLVEMENT

Major Issue: There is a need to adequately involve the public in water resource program development and implementation.

Authority/Background: The Water Resources Act of 1971 provides that:
"(1) The department shall make reasonable efforts to inform the people of the state about the state's water and related resources and their management. The department . . . shall not only invite but actively encourage participation by all persons and private groups and entities showing an interest in water resources programs. . . .

(2) The department shall similarly invite and encourage participation by all agencies of federal, state, and local government, . . . having interests or responsibilities relating to water resources. . . ." (RCW 90.54.060)

The department has attempted to conform to this mandate in several ways. As a means of disseminating information, a department newsletter, BASE-LINE, is published every two months and distributed to more than 2,000 readers. The newsletter provides information on departmental accomplishments such as the completion of a major project or adoption of a regulation under the Washington Administrative Code and provides information on upcoming events such as public meetings and hearings. Normally, the name, address, and telephone number of the staff contact is provided so that interested readers may obtain additional information or have their names placed on project-specific mailing lists.

With the exception of the newsletter, WDOE's emphasis on water resources public participation is through the individual programs. Typically, this process begins with the compilation of a mailing list of interested individuals and agency and tribal representatives. These people are then sent information on the proposed program and invited to public meetings, workshops, and/or hearings to discuss the issues and are invited to provide both informal comments and formal testimony. In addition, all administrative rules proposed for adoption under the Washington Administrative Code are published in the Washington State Register in accordance with the Administrative Procedures Act (Ch. 34.04 RCW). Legal notices are also printed in newspapers in accordance with Chapter 90.22 RCW. The department has found these procedures to be quite effective in obtaining review and comment by interested people.

The present publication requirements of Ch. 90.22 RCW often result in substantial costs to the state. The department has submitted proposed legislation to reduce the costs of publishing legal notices for anticipated regulation adoptions. This legislation would reduce the costs by reducing from three to two the number of times such notices must be published and by eliminating the requirement that the actual proposed flow levels be published for each stream. It is the department's experience that relatively few of the people attending the public hearings are there because of the legal notices. They are generally there because of notice provided through other means such as personal letters, newsletters, and information mailouts. The proposed legislation, if enacted, would result in a savings of approximately

\$7,800 in the first biennium and would not, in the department's opinion, result in any reduction in public participation.

Since July 1, 1982, the department has conducted a number of public hearings related to its water resources management activities. Public hearings or workshops have been held in the following locations on the following subjects:

Richland, Wenatchee	-	Columbia River Instream Resources Protection Program (IRPP)
Leavenworth, Wenatchee	-	Wenatchee River Basin IRPP
Walla Walla	-	Walla Walla River Basin program
Okanogan	-	Revisions to Okanogan Basin Management Program
Shelton	-	Kennedy-Goldsborough IRPP
Moses Lake	-	Quincy Ground Water Management
Bellingham	-	Nooksack IRPP
Ephrata, Spokane, and Seattle	-	Proposed ground water regulations

In addition to the above, many of these activities also included one or more public meetings and/or workshops intended to provide more informal discussion of any proposals. Also, department staff frequently are asked to make presentations to the Washington State Ecological Commission at its quarterly public meetings. These meetings also provide an excellent opportunity for public involvement in, and awareness of, the department's programs.

A LOOK AHEAD . . .

In FY 1985, the program described in this report was funded by approximately \$2.6 million in state general funds and employed a total of 79.6 FTEs. Of these totals, \$1.4 million and 45.6 FTEs were for the four regional offices of the Department of Ecology. The remaining \$1.2 million and 34 FTEs were for headquarters activities.

Table 11 illustrates the way the funds and FTEs are allocated within the various headquarters functions. Table 12 is a similar display for the four regional offices.

For FY 1986-1987, the water resources budget request is for a total increase of \$1.2 million and 13 additional FTEs. The highest priority request is for approximately \$18,400 to restore funding for several fundamental activities to the 1985-87 equivalent of the prebudget cut service level. In the last several years, water resources has been understaffed and badly cut due to statewide revenue shortfalls and mandatory vacancy rate cuts. As a result, virtually all available money is used for staff salary and benefits, leaving virtually nothing for travel and goods and services.

This request item is the highest priority because denying it, in the face of rising demands, would result in a permanent three- to five-year backslide in the services being provided to the department's water resources clientele. The restoration of these funds will allow a return to previous levels for activities such as regulating water rights holders, conducting water rights field examinations, development of instream resource protection programs, traveling to and conducting public meetings and hearings, and others. The request for increased funding for support of existing staff is crucial to the provision of services to the water resources client group at the level originally anticipated for the current biennium.

Of the requested increase of \$1.2 million and 13 FTEs, approximately \$635,000 and 9.5 FTEs are requested for the water resources program for increased ground water activities. (This includes 4.0 FTE requested for well-drillers enforcement.) The Water Quality Management program has also submitted a request for increased funding for its ground water activities.

The traditional ground water management concept of full utilization within a reasonable or feasible pumping lift is resulting in severe ground water declines in large areas of eastern Washington. Well interference problems are occurring because of large withdrawals for irrigation, municipal, or industrial uses. Also, several important ground water aquifers critical for drinking water supply are in danger of long-term irreversible contamination from surface contaminants or from salt-water intrusion. It is expected that the demand for ground water for a variety of potentially competing uses will increase dramatically in the next decade, especially as surface water sources become fully allocated. The tremendous demands which are being placed upon this extremely sensitive public resource today (about 60 percent of the state's drinking

Table 11

WATER RESOURCES PROGRAM
STAFFING AND BUDGET

FY 1985

Headquarters

Section	FTE	Function
Planning and Management Section	3.5	-instream resources protection
	2.0	-hydro project review
	2.5	-ground water management
	1.0	-review/revision of adopted regs.
	1.0	-water rights management/policy
	1.0	-clerical
\$343,000	11.0 FTE - TOTAL	
Adjudications Section	11.0	-numerous adjudications
	1.0	-referee, Yakima River Basin
	0.5	-clerical
\$409,000	12.5 FTE - TOTAL	
Project Assistance and Investigations Section	3.0	-ground water tech. invest.
(Note: Does not include about \$13.5 million for Ref. 27, Ref. 38, and Emergency Water Supply Grants.)	1.5	-surface water tech. invest.
	1.0	-Columbia Basin Project
	4.5	-project assistance and financing
	0.5	-clerical
\$414,167	10.5 FTE - TOTAL	
TOTAL HEADQUARTERS -- 34 FTE \$1,166,000		

Table 12

WATER RESOURCES PROGRAM
STAFFING AND BUDGET

FY 1985

Regional Offices

	FTE	\$
Northwest	7.9	246,584
Southwest	6.9	222,820
Central	15.7	473,947
Eastern	15.1	460,743
TOTAL	45.6	1,404,094

MAJOR ACTIVITIES

1. Water Right Applications
2. Complaint Response, Enforcement Actions, and Relinquishments
3. General Public Service Activities
4. Technical Investigations
5. Hydropower Project Review

FY 85 PROGRAM TOTALS

	FTE	\$
Headquarters	34.0	1.2 million
Regions	45.6	1.4 million
TOTAL	79.6	2.6 million

water is supplied from ground water) and which will be placed upon it in the next decade, make it absolutely essential for the state to secure adequate resources to ensure proper management. Proper management can only be achieved through the development of a comprehensive and complete data base. Much of the requested increase for ground water is designed to increase the department's ground water data gathering capabilities.

The department maintains that the proper development, use, regulation, and protection and preservation of our ground waters is perhaps the most important aspect of further economic growth and retention of a high quality of life for residents of many areas in Washington State.

Current levels of activity allow a minimal amount of activity in ground water management that, as noted above, is insufficient given the increasing demand for the ground water resources. The requested increases are necessary to establish the state's ground water strategy and a program consistent with the increasing demand on the resource and are by no means a request for optimal staffing for such activities.

Table 13 is a summary of the FY 86-87 budget request for the water resources program. The request is intended to provide increased staffing and funding which, in turn, will improve the department's ability to provide services to its water resources clientele. As discussed above, 9.5 FTEs of the total request for 13 FTEs is for ground water related activities, including 4.0 FTEs for well-drillers enforcement. The remaining 3.5 FTEs are for a variety of activities, including increased enforcement of water rights.

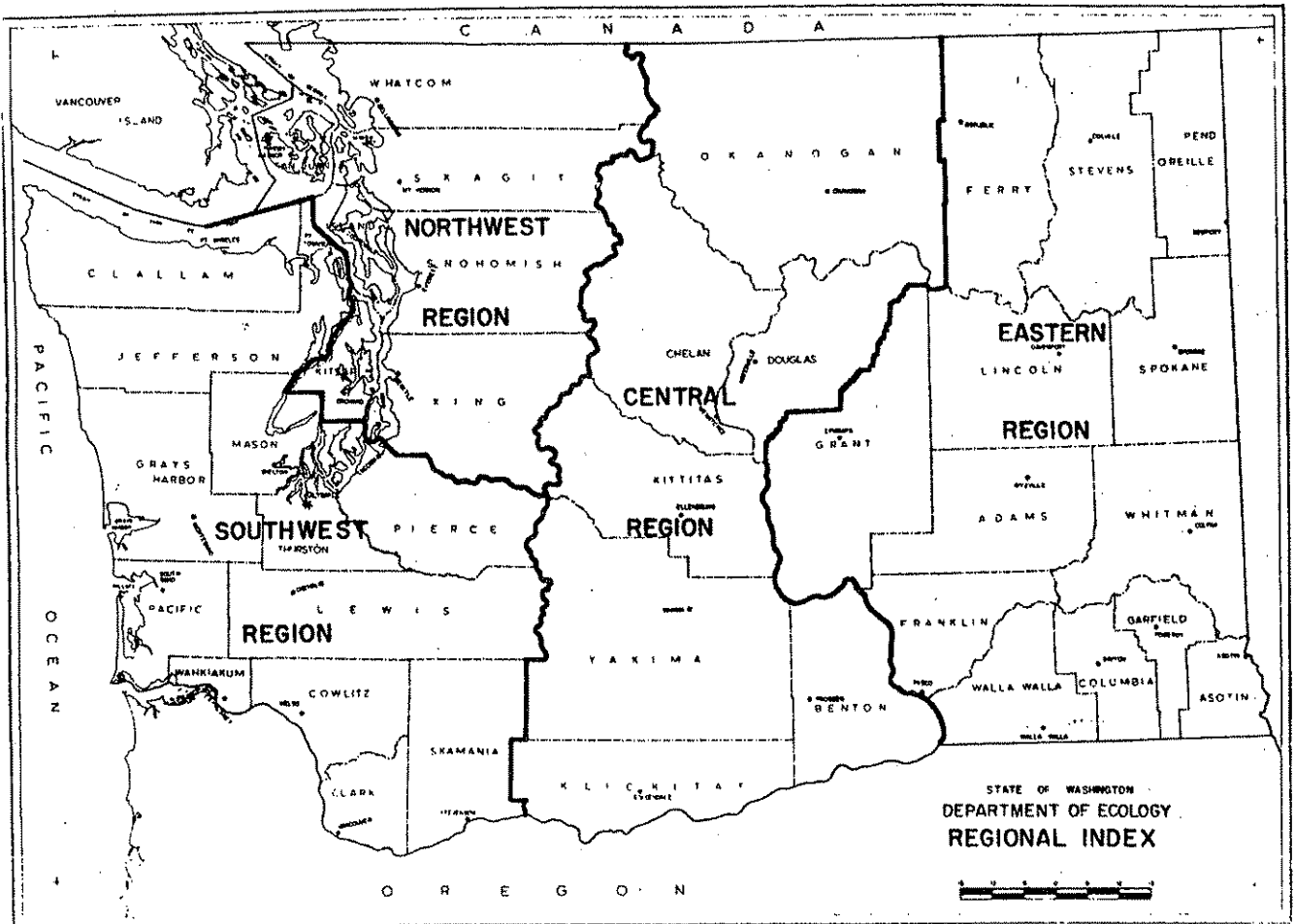
Figure 6 illustrates the four regions of the Department of Ecology, the regional office locations, and the name and phone number of the regional office managers and water resources supervisors.

Table 13

FY 86-87 Budget Request (Increase Above Current Level)
Water Resources Program
Summary

Activity	FTE Requested	\$ Requested for Biennium
1. Goods/Services for existing staff in HQ and Regions	0	198,860
2. Ground Water Technical Investigations	1.0	114,148
3. Ground Water--Public Water Supply Reservations	1.0	58,973
4. USGS Cooperative Agreement	0	100,000 (Rec. Rev.)
5. SWRO Supervisor	0.5	44,000
6. Well Drillers Enforcement	4.0	253,983
7. Ground Water Management/Enforcement, NWRO	1.0	67,360
8. Ground Water Management, HQ	1.0	51,917
9. Surface Water Masters (water rights enforcement)	3.0	240,000
10. Western States Water Council dues	0	19,500
11. Ground Water Technical Assistance (to local govt's under HB 1138)	1.5	90,000
TOTAL REQUEST	13 FTE	\$1,238,741
Ground Water	9.5 FTE	
Other	3.5 FTE	

Figure 6



Northwest Regional Office

4350 - 150th Avenue N.E.
Redmond, WA 98052
(206) 885-1900 SCAN 731-1111
Regional Manager - Joan Thomas
Water Resources Supervisor -
Herman Huggins

Southwest Regional Office

7272 Cleanwater Lane
Olympia, WA 98504
(206) 753-2353 SCAN 234-2353
Regional Manager - Clark Haberman
Water Resources Supervisor -
Jerry Louthain (206) 459-6044

Central Regional Office

3601 W. Washington
Yakima, WA 98903
(509) 575-2491 SCAN 558-2491
Regional Manager - Russ Taylor
Water Resources Supervisor -
Doug Clausen

Eastern Regional Office

N. 4601 Monroe St., Suite 100
Spokane, WA 99205
(509) 456-2926 SCAN 545-2926
Regional Manager - John Arnquist
Water Resources Supervisor -
Ted Olson

APPENDIX

Project Development and Rehabilitation Financing

Table 1

AGRICULTURAL WATER SUPPLY PROJECTS FINANCED WITH REFERENDUM 27 BOND PROCEEDS

Name of Agency and Project	Purpose of Project	Total Project Cost (Approx)	State Assistance		Status of Project	Acres Affected
			Grant	Loan		
1. Second Bacon Siphon and Tunnel with main conveyance facilities, U.S. Bureau of Reclamation, East Columbia Basin Irrigation District, and Quincy Irrigation District.	Second Main Siphon and Tunnel for conveyance of water to supplement Columbia Basin project and develop East High area.	\$117,000,000	\$15,000,000	----	Complete	136,000-200,000
2. Snipes Mountain Irrigation District.	Replace mainline Penstock to pumping plant and mainline discharge and parts of pressure distribution system.	550,000	192,500	----	Complete	2,000
3. South Columbia Basin Irrigation District Local Improvement District No. 2.	Construct and install pumping plant and pressure distribution pipe.	686,428	102,965	\$240,250	Complete	2,000
4. Wenatchee Heights Reclamation District.	Rehabilitate and replace pressure distribution system. Construct stabilization reservoir.	1,437,000	493,500	----	Complete	600
5. Okanogan Irrigation System.	Replace pumping plant on Okanogan River. Replace and rehabilitate mainline from pump and pressure pipeline laterals. Construct and install main concrete division box.	2,275,000	525,000	----	Complete	5,040
6. Agnew Irrigation District.	Replace portion of main canal with pipe.	168,434	55,677	----	Complete	7,198
7. Selah and Moxee Irrigation District.	Replace 3 wood flumes on main canal with 3 concrete pipe siphons.	225,000	33,750	78,750	Complete	4,600
8. Benton County PUD.	Horse Heaven Hills reconnaissance study.	30,000	15,000	----	Complete	----
9. Wenatchee Reclamation District.	Replace 2 wood flumes with steel and timber flumes. Replace segments of mainline wood stave pipe.	2,250,000	337,500	787,500	Complete	12,459
10. Icicle Irrigation District.	Replace lateral flume.	527,500	47,500	95,000	Complete	600
11. Peshastin Irrigation District.	Replace diversion dam.	64,000	9,500		Complete	2,365

Table 1

AGRICULTURAL WATER SUPPLY PROJECTS FINANCED WITH REFERENDUM 27 BOND PROCEEDS (Continued)

Name of Agency and Project	Purpose of Project	Total Project Cost (Approx)	State Assistance		Status of Project	Acres Affected
			Grant	Loan		
12. Granger Irrigation District.	Feasibility Study.	24,000	3,950	8,050	Complete	----
13. Outlook Irrigation District.	District Rehabilitation.	2,900,000	435,000	----	80% Complete	4,613
14. Roza Irrigation District.	Replace nonpressurized conveyance system with pressurized pipe.	608,730	66,424	----	Completed	1,700
15. Okanogan Irrigation District.	District Rehabilitation.	11,669,000	1,731,600	----	7% Complete	5,030
16. Roza Irrigation District	Replace nonpressurized conveyance system with pressurized pipe.	1,233,800	140,685	----	Just Started	2,700
		SUBTOTAL	19,190,551	1,232,050		250,965
		TOTAL	20,422,601			

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Table 2

EMERGENCY AGRICULTURAL WATER SUPPLY PROJECTS FINANCED WITH GENERAL OBLIGATION BOND PROCEEDS

I. 1977 Drought Alleviation

Name of Agency and Project	Purpose of Project	State Assistance		Total Project Cost	Direct Department Construction	Acres Affected
		Grant	Loan			
1. Stemilt Irrigation District.	Emergency drought alleviation.	\$ 17,950.53	\$ 289,400.00	\$ 307,350.53	----	300
2. Wenatchee Heights Reclamation District.	Emergency drought alleviation.	25,065.94	167,132.00	192,197.94	----	660
3. Lower Stemilt Irrigation District.	Emergency drought alleviation.	28,342.00	160,602.62	188,944.62	----	400
4. Roza Irrigation District LID Well Construction.	Emergency drought alleviation.				----	
a. Able Oil LID		22,800.00	136,000.00	158,800.00	----	153
b. Stout LID		31,590.80	168,078.86	199,669.66	----	492
c. Kershaw LID		28,933.69	169,624.27	198,557.96	----	132
d. Johnson LID		34,656.63	196,387.59	231,044.22	----	225
e. Charron LID		18,979.77	107,522.00	126,501.77	----	268
f. White LID		21,411.04	124,127.89	145,538.93	----	126
g. Hanrahan LID		13,939.08	78,801.81	92,740.89	----	162
5. Naches-Selah Irrigation District.	Emergency drought alleviation.	17,825.39	101,010.58	118,835.97	----	325
6. WSU and DOE Well Prosser Experiment Station	Emergency drought alleviation.	----	----	----	\$241,528.00	520
7. Test Well #16, Kittitas County.	Emergency drought alleviation.	---	----	----	115,940.00	----
8. Test Well #17, Douglas County.	Emergency drought alleviation.	---	----	----	113,172.00	----
1977 Drought Alleviation TOTAL		\$261,494.87	\$1,698,687.62*	\$1,960,182.49	\$470,640.00	3,763

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\$1,147,704.42 paid back leaving \$550,983.20 outstanding in loans as of January, 1978.
 (These figures apply only to the 1977 Drought Alleviation funds.)

Table 2

November 1984

EMERGENCY AGRICULTURAL WATER SUPPLY PROJECTS FINANCED WITH GENERAL OBLIGATION BOND PROCEEDS (Continued)

II. Alleviate Unsatisfactory Water Supply Conditions 1979 through 1984

Name of Agency	Purpose of Project	State Assistance		Total Project Cost (Approx)	Status of Project	Direct Department Construction	Acres Affected
		Grant	Loan				
1. Menas Irrigation District	Rehabilitation and enlargement of dam and reservoir.	\$ 500,000	\$ 500,000	\$ 2,000,000	Construction 99% complete	----	2,500
2. Icicle Irrigation District	Replace lateral flume and rehabilitate lateral system.	212,500	165,000	527,500	Completed	----	600
3. U.S. Bureau of Reclamation	Yakima enhancement feasibility study.	500,000	----	500,000	Phase I complete	----	----
4. Agnew Irrigation District	Replace siphon.	100,000	100,000	200,000	Complete	----	4,800
5. Sunnyside Valley Irrigation District	Relace 4 siphons.	1,223,000	1,223,000	2,446,000	Complete	----	7,000
6. Yakima Tieton Irrigation District	Construct dam and reregulation reservoir and replace open channel with pressurized system.	4,138,000	4,138,000	62,133,000	17% complete	----	25,500
7. Department of Ecology	Klickitat County Test Well No. 18.	----	----	----	Complete	196,000	----
8. Department of Ecology	Benton County Test Well No. 15.	----	----	----	Complete	101,500	----
9. Department of Ecology	Island County Test Wells.	----	----	----	Complete	327,000	----
10. Grandview Irrigation District	Rehabilitation of Conveyance System.	193,600	----	1,355,000	7% complete		3,771
SUBTOTAL		6,867,100	6,126,000			624,500	44,171
TOTAL		13,617,600					

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Table 3

AGRICULTURAL WATER SUPPLY PROJECTS FINANCED WITH REFERENDUM 38 BOND PROCEEDS

Name of Agency and Project	Purpose of Contract	Total Project Cost (Approx)	State Assistance		Direct Department Expenditures	Status of Contract	Acres Affected
			Grant	Loan			
1. Wenas Irrigation District	Rehabilitation and enlargement of dam and reservoir.	\$2,000,000	\$ 150,000	\$ 850,000	----	Complete	2,500
2. Columbia Irrigation District	Replace 42" siphon.	200,000	30,000	----	----	Complete	3,900
3. Columbia Irrigation District	District rehabilitation of conveyance system.	115,000	17,359	----	----	Complete	----
4. Brays Landing Irrigation District	Feasibility study for irrigation of "new" lands.	16,400	2,400	14,000	----	Complete	----
5. Agnew Irrigation District	District rehabilitation of diversion structure.	65,278	39,242	22,900	----	Complete	700
6. Brays Landing Irrigation District	Construction of new irrigation system.	1,017,100	152,565	864,535	----	Complete	446
7. Stemilt Irrigation District	Feasibility study for proposed rehabilitation project.	10,000	1,500	8,500	----	Complete	----
8. U.S. Geological Survey Basalt Pumpage Sodium Study	Define those aquifers and ground water flow systems where dissolved sodium presents irrigation problems.	845,000	633,082	----	----	Complete	----
9. Department of Ecology East Selah Reregulation Reservoir Design, CH2M Hill	Design, preparation of plans and specifications for proposed reregulating reservoir in the Yakima Project system.	----	----	----	\$665,474	28% Complete	----
10. Columbia Irrigation District, R and B Project	District conveyance system rehabilitation.	4,079,000	511,420	----	----	95% Complete	9,880
11. Columbia Irrigation District, Horn Rapids Fish Ladders and Screens	Design and install two fishways and screen intakes.	792,875	792,875	----	----	9% Complete	----
12. Wenatchee Reclamation District	District rehabilitation of conveyance system.	360,000	53,883	----	----	64% Complete	8,635

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Table 3

November 1984

AGRICULTURAL WATER SUPPLY PROJECTS FINANCED WITH REFERENDUM 38 BOND PROCEEDS (Continued)

Name of Agency and Project	Purpose of Contract	Total Project Cost (Approx)	State Assistance		Direct Department Expenditures	Status of Contract	Acres Affected
			Grant	Loan			
13. Kennewick Irrigation District	Canal lining and culvert replacement.	1,100,582	145,497	----	----	94% Complete	19,000
14. Stemilt Irrigation District	District rehabilitation of conveyance system.	475,872	71,381	404,491	----	62% Complete	1,121
15. City of Yakima	Design and install a fishway and screen intake.	863,174	332,000	----	----	Just Started	----
16. Yakima-Tieton Irrigation District	Construct dam and reregulating reservoir and replace open channel with pressurized system.	75,900,000	4,532,503	----	----	7% Complete	25,500
17. Methow Valley Irrigation District	Replacement of flume.	25,594	3,839	21,755	----	Complete	1,500
18. Department of Ecology/2nd Half Columbia Basin Project	Socioeconomic study/2nd half Columbia Basin Project	----	----	----	198,000	70% Complete	----
SUBTOTAL			\$7,469,526	\$2,186,181	\$863,474		\$73,182
TOTAL			\$10,519,181				

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Table 4

STATUS OF RECLAMATION REVOLVING ACCOUNT BOND INVESTMENTS
June 30, 1984

District	Original Amount	Issue Date	Maturity	Interest Rate (%)	Indebtedness
Aeneas Lake Irrigation District	\$ 220,500.00	1/1/71	1/1/76-1/1/10*	5	\$ 195,500.00
Chelan River Irrigation District	52,000.00	1/1/76	7/1/77-7/1/00*	4	42,000.00
Columbia Irrigation District	125,000.00	1/1/69	1/1/70-1/1/09*	4	55,000.00
Entiat Irrigation District	210,000.00	1/1/73	1/1/74-1/1/13*	5	185,000.00
Gardena Farms Irrigation District	200,000.00	7/1/56	1/7/57-7/1/96	3	90,500.00
Lower Stemilt Irrigation District	207,000.00	7/1/80	1/1/84-1/1/11*	6-1/4	203,000.00
Lower Squilchuck Irrigation District	70,000.00	1/1/76	1/1/80-1/1/10*	4	60,000.00
Methow-Okanogan Reclamation District	45,000.00	7/1/66	1/1/70-1/1/87	3	4,500.00
Methow Valley Irrigation District	58,000.00	7/1/48	1/1/53-1/1/87	1	6,000.00
Moab Irrigation District	160,000.00	1/1/69	7/1/72-1/1/09*	4	138,500.00
Moab Irrigation District	21,000.00	1/1/71	7/1/80-7/1/10*	4	20,200.00
Naches-Selah Irrigation District	480,000.00	1/1/57	1/1/62-1/1/90	3	137,000.00
North Dalles Irrigation District	50,000.00	1/1/62	1/1/62-1/1/02*	3	28,000.00
Pateros Irrigation District	15,000.00	1/1/54	1/1/55-1/1/85	3	700.00
White Salmon Irrigation District	50,000.00	1/1/62	1/1/63-1/1/02*	7	28,000.00
Whitestone Reclamation District	25,000.00	1/1/49	1/1/54-1/1/88	2	3,750.00
Whitestone Reclamation District	40,000.00	1/1/48	1/1/53-1/1/87	2	4,250.00
Wolf Creek Reclamation District	60,000.00	1/1/48	1/1/49-1/1/88	1	6,000.00
TOTAL	\$2,088,500.00				\$1,207,900.00

*Bond maturity in the year 2000 or later.

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Table 5

ACTIVE RECLAMATION REVOLVING ACCOUNT ADVANCES TO DISTRICTS

June 30, 1984

District	Original Amount	Contract Date	Interest Rate (%)	Current Balance
Selah and Moxee Irrigation District	\$42,500.00	12/10/78	5-1/2	\$63,836.08
Snohomish Drainage District No. 6	25,000.00	7/22/64	3	39,758.59
TOTAL	\$67,500.00			\$63,836.08

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Table 6

Status of Agricultural Water Supply Funds
(As of November 30, 1984)

<u>Program</u>	<u>Authorized Bond</u>	<u>Appropriated to 6/30/85</u>	<u>Expenditures to 11/30/84</u>	<u>Outstanding Obligations to 11/30/84</u>	<u>Balance</u>	<u>Pending Obligations^{1/}</u>
Referendum 27	\$25,000,000	\$25,000,000	20,049,951	1,668,400	3,281,649	\$3,000,000
Emergency						
Water Supply	18,000,000	17,100,000	10,923,015	5,104,569	1,972,416	\$ 450,000
Referendum 38	50,000,000	32,487,210	4,290,947	6,413,301	39,295,752	\$16,249,500

^{1/} See Table 7. These projects may or may not be funded in the FY 83-85 biennium.

Table 7

PLANNED AGRICULTURAL WATER SUPPLY
PROJECTS

A. Referendum 27

<u>Project</u>	<u>Estimated Cost</u>
Department of Ecology/Replace Lake Osoyoos Control Structure	\$3,000,000
TOTAL REFERENDUM 27	\$3,000,000

B. Referendum 38

Department of Ecology/East Selah Reregulating Reservoir	\$13,834,500
Sunnyside Board of Control Dam and Canal (Sunnyside Irrigation District)	300,000
Greater Wenatchee Irrigation District - Irrigation Water Supply Facilities	1,500,000
Lower Stemilt Irrigation District - Irr. Water Supply Facilities	200,000
Badger Mountain Irrigation District - Irr. Water Supply Facilities	15,000
Naches-Selah Irrigation District - Irr. Water Supply Facilities	400,000
TOTAL REFERENDUM 38	\$16,249,500

C. Emergency Water Supply

Granger Irrigation District Irr. Water Supply Facilities	200,000
Eastside and Westside Irrigation District - Irr. Water Supply Facilities	250,000

TOTAL EMERGENCY WATER SUPPLY \$ 450,000